

SAVANNAH HARBOR EXPANSION PROJECT CHATMAN  
COUNTY, GEORGIA AND JASPER COUNTY, SOUTH  
CAROLINA: FINAL GENERAL RE-EVALUATION RE-  
PORT AND ENVIRONMENTAL IMPACT STATEMENT  
JANUARY 2012

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COMMUNICATION

FROM

THE ASSISTANT SECRETARY OF THE ARMY,  
CIVIL WORKS, THE DEPARTMENT OF  
DEFENSE

TRANSMITTING

THE CORPS' FINAL GENERAL RE-EVALUATION REPORT AND  
ENVIRONMENTAL IMPACT STATEMENT

PART 5 OF 15



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**FINAL**  
**GENERAL RE-EVALUATION REPORT**  
**SAVANNAH HARBOR EXPANSION PROJECT**  
Chatham County, Georgia and Jasper County, South Carolina

**January 2012**  
(Revised July 2012)

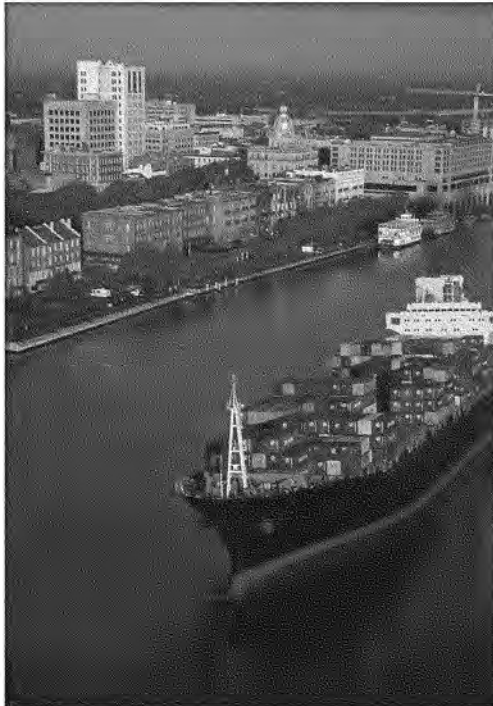
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Appendix C  
Attachment 3  
Parts 27-32

Volume 5



US Army Corps of  
Engineers  
Savannah District  
South Atlantic Division



# **SAVANNAH HARBOR EXPANSION GENERAL REEVALUATION REPORT**



## **DREDGED MATERIAL PHYSICAL ANALYSIS REPORT**

# Savannah Harbor Deepening General Re-evaluation Report

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## 1.0 Site Geology

### 1.1 General

The study area is underlain with unconsolidated and partly consolidated Atlantic Coastal Plain sediments. These sediments generally consist of unconsolidated to semi-consolidated layers of sand and clay; and semi-consolidated to very dense limestone and dolomite and can achieve thicknesses of about 5,500 feet. They range in age from late Cretaceous (approximately 100 million years old) to recent, or Holocene. The Atlantic Coastal Plain sediments overlie sedimentary strata and volcanics of Triassic age to early Jurassic age (approximately 230 million years old to about 170 million years old, respectively). These rocks overlie crystalline basement rocks of Paleozoic age (from 680 to 230 million years old) consisting of igneous intrusives and low-grade metamorphic rocks. The rock record is not continuous and time gaps exist where either no sediment deposition occurred or where erosional forces removed the rock record. In the project area, the post-Cretaceous sediments (those deposited within the last 65 million years) are estimated to be about 1,800 to 2,500 feet thick. These strata intersect a horizontal plane in a northeast to southwest trend and dip and thicken to the southeast. A discussion of the post-Cretaceous Atlantic Coastal Plain sediments follows, in descending order of occurrence. For the purpose of this discussion, the strata will be referred to based on time-rock units (i.e., rocks deposited during the same geologic time division).

### 1.2 Post-Miocene Units

The post-Miocene units consist of sediments deposited during the Pliocene, Pleistocene, and Holocene (recent) geologic ages (12 million years old and younger). These sediments are comprised of interbedded floodplain deposits of reworked alluvial and beach material and reworked Miocene sediments. Typically, these floodplain sediments are tan, gray, or greenish gray in color.

The post-Miocene unit sediments are found at the surface throughout the area. They consist of phosphatic, micaceous, and clayey sands of Pliocene age; feldspathic sands and gravels with clay beds of Pleistocene age; and varying mixes of clays, silts, sands, and gravels of Holocene age. There is very little fossil material in these sediments. In some areas, Pliocene and Pleistocene sediments may be missing from the geologic record. It is uncertain if these sediments exist within the project area.

The Holocene (recent) sediments generally consist of varying mixtures of clays, silts, sands, and, occasionally, gravels. Within the project area, these sediments are represented by low and high liquid-limit clays with varying amounts of sand and organic matter (CL and CH); inorganic, low and high liquid-limit silts (ML and MH); silty sands containing up to 40 percent silts, some clay and mica (SM); and cleaner, poorly graded sands containing less than 12 percent silts and clays (SP, SP-SM). The consistency of the fine-grained soils (silts and clays) can be described as very soft to soft. The coarse-grained soils (sands) can be described as very loose to dense, with the majority being

medium. The materials are somewhat cohesive when small amounts of silt or clay are present; however, they tend to slough below the water table when there is little fine material.

The Holocene materials are often associated with beaches and dunes. They were carried from topographically high areas from the Piedmont and upstream Coastal Plains and deposited during the formation of the floodplain of the Savannah River. The sediments are mixed by hydraulic action of the waters in the river and by erosion and redeposition of the riverbank and river shoals as the river meanders. There is no active method for sediment accumulation beyond the banks of the river. Consequently, with the exception of accumulations of organic material, there are no materials being deposited there.

Immediately below the Holocene Unit is the Pleistocene series of sediments. These sediments generally consist of arkosic sands and gravels with discontinuous lignitic and fossiliferous clay beds and overlying micaceous sands. These are underlain by the Pliocene sediments, which consist of phosphatic, micaceous, and clayey sands with limestone and dolomite beds. These sediment beds are thin and have not been regularly identified in the project area.

### **1.3 Miocene Units**

According to Clarke and others (1990), the Miocene units (20 to 12 million years old) can be subdivided into three sub-units (Miocene unit A, B, and C), each consisting of three geologically similar beds. The lowest bed of each sub-unit consists of a basal carbonate layer of sandy, phosphatic limestone or dolomite. A layer of interlaminated silty clay and clayey silt overlies the basal carbonate layer. The upper beds consist of sand layers of poorly sorted, very fine to granule-sized quartz sand with some phosphatic and dolomitic grains. Each three-bed unit is separated from the beds above and below it by an erosional surface, or unconformity. These layers are of importance because they form the primary confining layer for the principal artesian aquifer in the area.

The Miocene units at the project extend to a depth of about 220 feet in the upper reaches of the project area. They can achieve a thickness of about 470 feet along the coastal area, but range from about 60 to 175 feet thick under the project area. Miocene Unit C, the lowest unit, appears to be missing in the project area.

The beds of the Miocene were deposited during transgressions and regressions (rising and lowering) of the sea. The basal carbonates were deposited in open marine water during full transgressions. During this time, the land surface was at its greatest depth below the water surface. As the sea regressed, the interlayered silts and clays were deposited in a shallower, nearshore environment that allowed for the settling of the fine silts and clays. In this environment, coarser materials were already removed from the sediment and calcareous materials were not a major contributor. The upper sand beds were deposited in a shallow water, nearshore environment. At this time, the

water was at its shallowest. Materials deposited during the period the sea transgressed inland were, apparently, removed during some erosional event. As the next sea regression occurred, the next sequence of beds was deposited until the final sequence, Miocene Unit A, was deposited.

#### **1.4 Oligocene Unit**

Sediments of the Oligocene units were deposited between 35 and 20 million years ago. This unit can be as thick as 120 feet, and in some areas it is missing. The unit is estimated at approximately 60 thick under the project area, based on geophysical data.

The Oligocene unit sediments are typically tan colored limestones with varying amounts of micrite (dense, non-porous limestone), fine fossil foraminifera shells, and silt and clay-sized phosphate. The sediments were deposited in an offshore mounded carbonate bank environment, with some sand material being deposited where the bank nears the shore.

#### **1.5 Eocene Units**

Immediately below the Oligocene Unit are the Eocene Units. The Eocene sediments, deposited between 55 and 35 million years ago, are subdivided into three sub-units: the upper, middle, and lower Eocene Units. It is the source of the principal artesian aquifer in the Savannah area, the Floridan Aquifer.

##### **1.5.1 Upper Eocene Unit**

The upper Eocene Unit throughout most of the coastal area of Georgia consists of the massive, fossiliferous, Ocala Limestone. There is some glauconite at the base of the unit and an increase in clastic material in the northern coastal areas, including the project area. This unit is more than 200 feet thick throughout the coastal area, and achieves a thickness of 400 feet in some areas. These sediments were deposited in a warm, shallow water, nearshore carbonate bank environment, similar to the other Eocene units.

##### **1.5.2 Middle Eocene Unit**

The middle Eocene Unit is separated from the lower and upper units by erosional surfaces, or unconformities. It is lithologically similar to the lower unit, and can be distinguished based on the abundance of microfossils. The upper beds of this unit are more dolomitic than the upper beds of the lower unit and contrast with the lower limestone beds of the upper Eocene Unit. This unit can be up to 1,000 feet thick in some areas. At Hutchinson Island and Fort Pulaski, near Savannah, Georgia, the unit is 700 and 540 feet thick, respectively. This unit is most likely more than 700 feet thick in the study area. These sediments were deposited in an environment similar to that of the lower Eocene Unit.

### **1.5.3 Lower Eocene Unit**

This unit unconformably overlies the Paleocene unit below it. It consists of carbonate sediments, predominantly glauconitic limestones and dolomites, with sand beds in the upper part. These beds attain a thickness of up to 800 feet in the southern coastal area of Georgia but are only 120 to 180 feet thick in the project area. This unit was deposited in a nearshore warm, shallow, open marine environment.

### **1.6 Paleocene Unit**

Sediments of the Paleocene Unit were deposited between 65 and 55 million years ago. The Paleocene Unit in the northern coastal Georgia area consists of glauconitic sand, argillaceous sand, and medium to dark gray clays. The uppermost beds of the unit consist of a hard, sandy, glauconitic, fossiliferous limestone. The Paleocene Unit can be over 425 feet thick, but there is little data in the coastal area to develop accurate estimates in the project area. The Paleocene time marked the beginning of a regional sea transgression that lasted through the Eocene. The sediments represent marine to marginal marine, nearshore depositional environments. This unit unconformably overlies late Cretaceous age sediments.

## **2.0 Subsurface Investigations**

### **2.1 Background**

The Geology/Hydrogeology and HTRW Design Section, U.S. Army Corps of Engineers, Savannah District, has performed a number of subsurface investigations within the project area over the last 35 years. Several hundred borings have been drilled within and adjacent to the Savannah Harbor. The majority of these borings were along the north side of the channel and were drilled for the Savannah Harbor Widening and the Savannah Harbor Deepening projects, both completed at the end of the last century. These borings were constructed for the purpose of evaluating the in-situ materials within specific areas of the channel for harbor modification projects. The majority of the borings were water-borne; however, land-based borings have been completed to identify soil materials within the channel side slopes for the purpose of determining the most probable channel side slopes resulting for each proposed harbor modification. The investigations have used a variety of methods to obtain subsurface data, including Vibracore, splitspooning, coring, and sub-bottom sonic profiling. Standard penetration sampling using a split-barrel sampler was the method most often used. Using this method, a 1-3/8 inch inner diameter standard split barrel sampler was driven through the material using a 140-pound hammer with a 30-inch fall. The sampler was retrieved and the material was described in accordance with the Unified Soil Classification System. Selected samples were submitted for a variety of mechanical analyses, including grain size analysis, Atterberg limits, natural moisture content, and specific gravity calculations.



## 2.2 Procedures

The majority of the borings constructed within the channel were drilled from a floating barge using a variety of core drills to recover the samples. The barges were somewhat stabilized using steel spuds or anchors. They raised and lowered with the tide cycle. Drilling was very difficult off these platforms and often had to be terminated due to strong tides that would not allow the drill crew to maneuver the barge to a boring location. Wakes caused by high winds and ship traffic also greatly hampered the ability to drill from such a platform.

This drilling platform was also used to construct the Vibracore borings. This method involved vibrating a plastic tube through the subsurface soils to collect a sample that provided a more representative indication of the in-situ nature of the soils. This method could recover soft muds and loose sands that were often lost using standard penetration methods with a split-barrel sampler. However, this method generally did not penetrate stiff silts and clays or medium dense sands, or other materials exhibiting some degree of cementation, induration, or other characteristic of lithification. Also, this method did not provide adequate data that could be easily related to the relative strengths of the soils penetrated using other drilling methods.

During the mid 1980's, drilling was conducted using the U.S. Army Corps of Engineers self-elevating barge Explorer. This barge was a powered vessel that could maneuver on its own using twin diesel motors. It also had the ability to elevate itself above the water on three legs to eliminate the actions of the tide cycles and wave action. Drilling from this platform proved to be much more efficient and allowed the employment of more consistent drilling techniques. In addition, the Explorer allowed drilling in areas that were inaccessible to the standard barge due to rapid tide currents, deep water, and extreme distances from land.

## 3.0 Material Summary

### 3.1 General

The sediments underlying the project area are largely a result of varying depositional environments. As such, the sediments are discontinuous both vertically and horizontally and numerous variations occur over short distances. Boring logs completed for these investigations are included in Appendix A of this document. Analytical results of the mechanical analyses of the samples collected during these investigations are provided in Appendix B. The plans showing the locations of the borings are provided as Appendix D.

### 3.2 Soils

The uppermost sediments consist of varying mixtures of poorly-graded sands (SP), silty sands (SM), poorly-graded gravels (GP), organic silts (OH), low liquid-limit and high liquid-limit silts (ML and MH), clayey sands (SC), and low liquid-limit and high liquid-limit clays (CL and CH). Standard penetration tests from borings indicate the consistency of the fine-grained soils (silts and clays) range from very soft (0 to 4 blows per foot) to very dense (50 or greater blows per foot), while the coarse-grained soils (sands and gravels) range in consistency from dense (30 to 50 blows per foot) to very dense (50 or greater blows per foot). Typically, these soils vary in color from tan, gray, brown, light brown, and greenish to bluish gray. Generally, soils at the river bottom exhibit lower consistency than the deeper soils. The bottom soils are often very loose and semi-liquid and can extend from the bottom of the river channel to only a few inches to several feet deep.

The underlying soils consist of silty sands (SM), clayey sands (SC), high liquid-limit silts (MH), and low liquid-limit and high liquid-limit clays (CL and CH). Standard penetration tests indicate the consistencies of the fine-grained soils range from stiff (8 to 15 blows per foot) to hard (30 or greater blows per foot), while the coarse-grained soils range in density from dense (30 to 50 blows per foot) to very dense (50 or greater blows per foot). In general, these soils are characterized by a significant increase in blow counts, consistency, and cohesiveness. These soils are often described as gray, grayish green, green, and olive green.

### 3.3 Rock

Lenses of moderately hard to hard limestone have been encountered in borings constructed around the project area; however, its occurrence has been below the depths of concern for this project. In addition, borings drilled in 1969 identified compaction shale in the northern end of the channel, near Kings Island turning basin. This lithology has not been identified in any of the more recent borings and this material may be analogous to the greenish-gray to olive green, stiff to hard, fat silts and dense to very dense silty sands that have been described in later borings.

A high resolution, sub-bottom acoustic survey was performed in the channel during the early 1990's as part of the investigation program for the recently completed harbor deepening. This survey showed an area of high acoustic impedance within the middle channel (stations 70+000 to 24+000). Borings drilled in this area and subsequent dredging indicated this material was similar to the greenish-gray to olive green, stiff to hard, fat clays and dense to very dense silty sands described above.

Thin layers of rock were identified in a boring constructed in 2002 at the interface between the post-Miocene sediments and the top of the Miocene. The layer was no more than a few centimeters thick and was a green, fine-grained, sandstone. These more recent borings also describe black gravels and oblong rock fragments within the Miocene sediments, consistent with the geological descriptions of the phosphatic materials within the Miocene sediments provided above in Section 1.3. These materials were encountered both within and below the project depth.

## **4.0 Radiological Screening**

### **4.1 Purpose**

The Savannah Harbor Deepening project area is located downstream from the Savannah River Site, where radioactive materials are processed. Releases of radioactive materials from the site have been documented over the years, raising concern as to whether such releases could cause accumulation of these materials within the sediments that are to be removed from within the project area. The likelihood of this occurring has been considered improbable; nevertheless, a decision was made to screen selected sediment samples that were collected during the 2002 investigations for gross radioactivity.

### **4.2 Procedures**

All samples collected during the 2002 subsurface investigations were placed in sample jars, labeled, inventoried, boxed, and shipped to the Savannah District Army Corps of Engineers' Environmental and Materials Unit located in Marietta, Georgia. Initially, the entire stack of sample boxes was screened, and then selected individual samples. Prior to performing the analyses described in Section 2.1, above, randomly selected jar samples from every boring hole was screened for gross radioactivity. This process involved using a Bicron Geiger Mueller gauge equipped with a pancake probe. The probe was placed approximately 1 centimeter above the soil samples, and the highest reading was recorded. Readings were also collected from around the facility to determine ambient background levels.

### **4.3 Results**

All results were measured in milli-Rems per hour (mRem/hr). Background values varied between 0.01 and 0.03 mRem/hr. Values from the sediment samples ranged from 0.02 to 0.04 mRem/hr. These results are consistent with the background values, with only a few samples exhibiting an increase of 0.01 mRem/hr over the background range. This should be anticipated, since these soils contain phosphatic and glauconitic minerals, along with other clays, that exhibit naturally-occurring levels above background levels. These results are two magnitudes below acceptable action levels approved by OSHA and the EPA that range between 1 mRem/hr and 5mRem/hr. Based on these results, it is believed that the levels of gross radioactivity measured in the samples is naturally occurring and poses no hazards to the environment.

## **5.0 Possible Effects of the Project on Ground Water**

In the past, any proposed deepening of Savannah Harbor has raised questions about the possible effects this action would have on the confining layer of the principal artesian aquifer, known as the Floridan aquifer, and, ultimately, on the aquifer itself.

In light of some of the seemingly conflicting data, additional information was needed to adequately assess the possible effects of a deepened channel on the Upper Brunswick aquifer (as described by Clarke and others, 1990) and the Upper Floridan (principal artesian) aquifer that underlies the entire project area. It was decided that further studies should be conducted to verify the generalized data available from previous studies (mentioned above) of these aquifers. These studies would look at the potential impacts to the confining layer due to removing some confining and relict stream channel material. The results of these additional studies completed to date are provided in a separate document. Additional studies have yet to be completed. They are planned for completion in 2004.

## **6.0 Additional Geotechnical Requirements**

Changes in channel geometry due to deepening, widening, realignment, slope stability, or feature avoidance require re-evaluation of existing data. As channel geometry continues to change, older geotechnical data is no longer adequate to evaluate these changes for a number of reasons. One concern is that there may be an insufficient number of borings located in areas that were naturally deeper than proposed project depths but no longer are. Another concern is that older borings, drilled for a much shallower project, were completed at depths that are shallower than proposed project depths. Also, as channels become deeper to accommodate larger vessels bend widenings are often added in areas that have not been previously investigated. These concerns were considered prior to the performance of the investigations conducted for the re-evaluation of this project. However, as additional changes in channel geometry are identified these concerns will be re-evaluated and additional subsurface investigations will be required.

APPENDIX A  
SAVANNAH HARBOR  
BORING LOGS

# SAVANNAH HARBOR BORING LOGS

Kings Island  
Turning Basin

| DRILLING LOG                                                                   |       | DIV. 4          | INSTALLATION                                                                                               | SHEET 1         |                   |                                                                                |
|--------------------------------------------------------------------------------|-------|-----------------|------------------------------------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| PROJECT Savannah Harbor                                                        |       | South Atlantic  | Savannah, Ga.                                                                                              | OF 2 SHEETS     |                   |                                                                                |
| Widening and Deepening, Phase 2                                                |       |                 |                                                                                                            |                 |                   |                                                                                |
| LOCATION (Coordinates of Station)                                              |       |                 | 10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon, R                                                              |                 |                   |                                                                                |
| See Plan                                                                       |       |                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bit                                                        |                 |                   |                                                                                |
| DRILLING AGENCY                                                                |       |                 | MLJ                                                                                                        |                 |                   |                                                                                |
| Savannah District                                                              |       |                 | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                                    |                 |                   |                                                                                |
|                                                                                |       |                 | Failing 314 C.D. #8                                                                                        |                 |                   |                                                                                |
| HOLE NO. (As shown on drawing title and file number)                           |       | 1               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                 | 1               |                   |                                                                                |
|                                                                                |       |                 | DISTURBED                                                                                                  | 0               |                   |                                                                                |
| NAME OF DRILLER                                                                |       |                 | 14. TOTAL NUMBER CORE BOXES                                                                                | 2               |                   |                                                                                |
| Creamer                                                                        |       |                 | 15. ELEVATION GROUND WATER                                                                                 | 0.0' - Tidal    |                   |                                                                                |
| DIRECTION OF HOLE                                                              |       |                 | 16. DATE HOLE                                                                                              | 19 Mar 69       |                   |                                                                                |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |       | DEG. FROM VERT. | STARTED                                                                                                    | COMPLETED       |                   |                                                                                |
|                                                                                |       |                 | 19 Mar 69                                                                                                  | 20 Mar 69       |                   |                                                                                |
| THICKNESS OF OVERBURDEN                                                        |       |                 | 17. ELEVATION TOP OF HOLE                                                                                  | -14.3'          |                   |                                                                                |
| DEPTH DRILLED INTO ROCK                                                        |       |                 | 18. TOTAL CORE RECOVERY FOR BORING                                                                         | 58 %            |                   |                                                                                |
| TOTAL DEPTH OF HOLE                                                            |       | 45.5'           | 19. SIGNATURE OF INSPECTOR                                                                                 |                 |                   |                                                                                |
|                                                                                |       |                 | Allen Merritt, Robert L. Siesen, Geologist                                                                 |                 |                   |                                                                                |
| ELEVATION                                                                      | DEPTH | LEGEND          | CLASSIFICATION OF MATERIALS (Description)                                                                  | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                                                | 5     |                 | Water                                                                                                      |                 |                   | No Sample obtained of OL materials, stratum very thin                          |
|                                                                                | 10    |                 | Very thin, very soft, layer of OL-organic silt above sand                                                  |                 |                   |                                                                                |
| -14.3'                                                                         | 15    |                 | SH-Gray, very fine grained, silty sand                                                                     |                 | Jer 1             | 14.3' to 16.5' Washed out while setting casing                                 |
|                                                                                | 20    |                 | ML-Greenish gray, clayey to sandy silt, moderate resistance to knife blade penetration from 18.0' to 24.5' | 100             |                   | Splitspoon 16.5' to 18.0' 4" Casing set to 18.5'                               |
|                                                                                | 25    |                 | SH-Gray, silty, very fine grained sand, moderate resistance to knife blade penetration from 24.5' to 29.5' | 86              |                   | Pull #1, 18.0' to 19.5' Run 1.5', Rec 1.5'                                     |
|                                                                                | 30    |                 |                                                                                                            | 40              |                   | Pull #2, 19.5' to 24.5' Run 5.0', Rec 4.3' CI 0.7'                             |
|                                                                                |       |                 | Continued on Sheet #2                                                                                      |                 |                   | Pull #3, 24.5' to 29.5' Run 5.0', Rec 2.0' CI 3.0'                             |
|                                                                                |       |                 | (Revised by Amendment No. 0001)                                                                            |                 |                   |                                                                                |

| DRILLING LOG (Cont Sheet)                               |            |             |                                                                                                         | VARIATION TOP OF HOLE      |                              | Hole No.                                                                               |  |
|---------------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|----------------------------------------------------------------------------------------|--|
| PROJECT Savannah Harbor Widening and Deepening, Phase 2 |            |             |                                                                                                         | INSTALLATION Savannah, Ga. |                              | SHEET 2 OF 2 SHEETS                                                                    |  |
| ELEVATION<br>a                                          | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                       | % CORE<br>RECOVERY<br>e    | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |  |
|                                                         | 35         |             | SM-Tan, very fine grained, silty sand, slight resistance to knife blade penetration from 39.5' to 41.6' | 24                         | 1                            | Pull #4, 29.5' to 34.5'<br>Run 5.0', Rec 1.2'<br>CI 3.3'                               |  |
|                                                         | 40         |             |                                                                                                         | 44                         |                              | Pull #5, 34.5' to 38.8'<br>Run 4.3', Rec 1.9'<br>CI 2.4'                               |  |
|                                                         | 45         |             | Compaction shale, gray, sandy, moderate resistance to knife blade penetration<br>BOTTOM OF HOLE 45.5'   | 72                         |                              | Pull #6, 38.8' to 41.6'<br>Run 2.8', Rec 2.0'<br>CI 0.8'                               |  |
|                                                         |            |             | Soils field classified in accordance with the Unified Soil Classification System.                       |                            |                              | Pull #7, 41.6' to 45.5'<br>Run 3.9', Rec 3.1'<br>CI 0.8'                               |  |
|                                                         |            |             |                                                                                                         |                            |                              | Used 150 to 250 lbs. pressure while coring.                                            |  |

ONLY

(Revised by Amendment No. 0001)



HOLE NO. 2

| DRILLING LOG                                                                                   |       | DIVISION       | INSTALLATION                                                                                                                                                           | SHEET           |                   |                                                                                                               |
|------------------------------------------------------------------------------------------------|-------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|---------------------------------------------------------------------------------------------------------------|
|                                                                                                |       | South Atlantic | Savannah                                                                                                                                                               | 1 OF 2 SHEETS   |                   |                                                                                                               |
| 1. PROJECT Savannah Harb Widening and Deepening, Phase 2                                       |       |                | 10. SIZE AND TYPE PIT 1-3/8" Splitspoon, K                                                                                                                             |                 |                   |                                                                                                               |
| 2. LOCATION (Continuation of Station)                                                          |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core B11                                                                                                                    |                 |                   |                                                                                                               |
| See Plan                                                                                       |       |                | MIN                                                                                                                                                                    |                 |                   |                                                                                                               |
| 3. DRILLING AGENCY Savannah District                                                           |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                                                                                                |                 |                   |                                                                                                               |
|                                                                                                |       |                | Follmer 314 C-D-78                                                                                                                                                     |                 |                   |                                                                                                               |
| 4. HOLE NO. (As shown on drawing title and file number)                                        |       |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                                                                                              |                 |                   |                                                                                                               |
| 2                                                                                              |       |                | 1 Jar 0                                                                                                                                                                |                 |                   |                                                                                                               |
| 5. NAME OF DRILLER King                                                                        |       |                | 14. TOTAL NUMBER CORE BOXES                                                                                                                                            |                 |                   |                                                                                                               |
|                                                                                                |       |                | 2                                                                                                                                                                      |                 |                   |                                                                                                               |
| 6. DIRECTION OF HOLE                                                                           |       |                | 15. ELEVATION GROUND WATER                                                                                                                                             |                 |                   |                                                                                                               |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT. |       |                | 0.0 - Tidal                                                                                                                                                            |                 |                   |                                                                                                               |
| 7. THICKNESS OF OVERBURDEN                                                                     |       |                | 16. DATE HOLE                                                                                                                                                          |                 |                   |                                                                                                               |
|                                                                                                |       |                | STARTED COMPLETED                                                                                                                                                      |                 |                   |                                                                                                               |
|                                                                                                |       |                | 21 Mar 69 21 Mar 69                                                                                                                                                    |                 |                   |                                                                                                               |
| 8. DEPTH DRILLED INTO ROCK                                                                     |       |                | 17. ELEVATION TOP OF HOLE                                                                                                                                              |                 |                   |                                                                                                               |
|                                                                                                |       |                | -14.0'                                                                                                                                                                 |                 |                   |                                                                                                               |
| 9. TOTAL DEPTH OF HOLE                                                                         |       |                | 18. TOTAL CORE RECOVERY FOR BORING                                                                                                                                     |                 |                   |                                                                                                               |
| 46.2'                                                                                          |       |                | 55 %                                                                                                                                                                   |                 |                   |                                                                                                               |
|                                                                                                |       |                | 19. SIGNATURE OF INSPECTOR                                                                                                                                             |                 |                   |                                                                                                               |
|                                                                                                |       |                | Allen Harritt, Robert Sieson, Geologist                                                                                                                                |                 |                   |                                                                                                               |
| ELEVATION                                                                                      | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                                                                              | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant)                               |
|                                                                                                |       |                | Water, very thin layer, very soft OL-organic silt above sand                                                                                                           |                 |                   | Casing drilled 2.0'                                                                                           |
| 5                                                                                              |       |                |                                                                                                                                                                        |                 |                   | <div style="writing-mode: vertical-rl; transform: rotate(180deg);">           SECTION ONLY FOR         </div> |
| 10                                                                                             |       |                |                                                                                                                                                                        |                 |                   |                                                                                                               |
| -14.0                                                                                          |       |                |                                                                                                                                                                        |                 |                   |                                                                                                               |
| 15                                                                                             |       |                | SP-Tan-gray, very fine sand, slightly silty                                                                                                                            |                 | Jar 1             |                                                                                                               |
|                                                                                                |       |                | Silt-Gray, silty, very fine grained to medium grained sand, micaceous, with thin layers of ML-sandy silt, moderate resistance to blade penetration from 15.5' to 19.0' | 71              |                   | Pull #1, 15.5' to 19.0' Run 3.5', Rec 2.5' CI 1.0'                                                            |
|                                                                                                |       |                | Siltstone, moderate resistance to knife blade penetration from 19.0' to 31.0'                                                                                          | 90              |                   | Pull #2, 19.0' to 24.0' Run 5.0', Rec 4.5' CI 0.5'                                                            |
|                                                                                                |       |                |                                                                                                                                                                        | 43              |                   | Pull #3, 24.0' to 31.0' Run 7.0', Rec 3.0' CI 4.0'                                                            |
|                                                                                                |       |                |                                                                                                                                                                        |                 |                   | Soft spots recorded this run                                                                                  |
| 30                                                                                             |       |                | Continued on Sheet #2                                                                                                                                                  |                 |                   |                                                                                                               |

(Revised by Amendment No. 0001)

| DRILLING LOG (Cont Sheet)                                  |            |             | ELEVATION TOP OF HOLE<br>-14.0'                                                                                                                                                                                                                                                         |                                | Hole No. 2                   |                                                                                           |
|------------------------------------------------------------|------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor<br>Widening and Deepening, Phase 2 |            |             | INSTALLATION<br>Savannah, Ga.                                                                                                                                                                                                                                                           |                                | SHEET<br>OF 2 SHEETS         |                                                                                           |
| ELEVATION<br>a                                             | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                                                                                                                                                       | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                                            |            |             | Siltstone                                                                                                                                                                                                                                                                               |                                |                              |                                                                                           |
|                                                            | 35         |             | SH-Gray, very fine grained,<br>slightly silty sand, very<br>slight resistance to knife<br>blade penetration from<br>31.0' to 36.0', SM sand<br>and ML sandy silt with<br>generally slight and<br>spotty moderately resist-<br>ance to knife blade<br>penetration from 36.0' to<br>46.2' | 60                             |                              | Pull #4, 31.0' to 36.0'<br>Run 5.0', Rec 3.0'<br>CI 2.0'                                  |
|                                                            | 40         |             |                                                                                                                                                                                                                                                                                         | 32                             |                              | Pull #5, 36.0' to 38.5'<br>Run 2.5', Rec 1.7'<br>CI 0.8'                                  |
|                                                            |            |             |                                                                                                                                                                                                                                                                                         | 68                             |                              | Pull #6, 38.5' to 41.0'<br>Run 2.5', Rec 1.7'<br>CI 0.8'                                  |
|                                                            | 45         |             | Core recovery less than 10%.<br>Driller reported material as<br>soft while coring.                                                                                                                                                                                                      | 8                              |                              | Pull #7, 41.0' to 46.2'<br>Run 5.2', Rec 0.4'<br>CI 4.8'                                  |
|                                                            |            |             | BOTTOM OF HOLE 46.2'                                                                                                                                                                                                                                                                    |                                | 2                            |                                                                                           |
|                                                            |            |             | Soils field classified in<br>accordance with the Unified<br>Soil Classification System.                                                                                                                                                                                                 |                                |                              |                                                                                           |

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| PROJECT                                                    |  |  | LOCATION                                                                                             |  | SHEET                                            |  |
|------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------|--|--------------------------------------------------|--|
| 1. PROJECT                                                 |  |  | 2. LOCATION                                                                                          |  | 3. SHEET                                         |  |
| Savannah Harbor                                            |  |  | South Atlantic                                                                                       |  | Savannah, GA.                                    |  |
| Widening and Deepening, Phase 2                            |  |  |                                                                                                      |  | 10. SIZE AND TYPE OF PIT 1-3/8" Spitspoon/R Core |  |
| LOCATION (Coordinates or Station)                          |  |  |                                                                                                      |  | 11. DATUM FOR ELEVATION SHOWN (TBM or BSL) Bit   |  |
| See Plan                                                   |  |  |                                                                                                      |  | 12. MANUFACTURER'S DESIGNATION OF DRILL          |  |
| 3. DRILLING AGENCY                                         |  |  |                                                                                                      |  | Falling 314 C.D. #8                              |  |
| Savannah District                                          |  |  |                                                                                                      |  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN   |  |
| 4. HOLE NO. (As shown on drawing title<br>and life number) |  |  | 3                                                                                                    |  | DISTURBED 1 Jar UNDISTURBED 0                    |  |
| 5. NAME OF DRILLER                                         |  |  | Creamer                                                                                              |  | 14. TOTAL NUMBER CORE BOXES 2                    |  |
| 6. DIRECTION OF HOLE                                       |  |  | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 15. ELEVATION GROUND WATER 0.0 - Tidal           |  |
| 7. THICKNESS OF OVERBURDEN                                 |  |  |                                                                                                      |  | 16. DATE HOLE                                    |  |
| 8. DEPTH DRILLED INTO ROCK                                 |  |  |                                                                                                      |  | STARTED 24 Mar 69 COMPLETED 24 Mar 69            |  |
| 9. TOTAL DEPTH OF HOLE 46.4'                               |  |  |                                                                                                      |  | 17. ELEVATION TOP OF HOLE -13.5'                 |  |
|                                                            |  |  |                                                                                                      |  | 18. TOTAL CORE RECOVERY FOR BORING 60 %          |  |
|                                                            |  |  |                                                                                                      |  | 19. SIGNATURE OF INSPECTOR                       |  |
|                                                            |  |  |                                                                                                      |  | Allen Merritt, Robert L. Siesen, Geologist       |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                                         | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|-----------|-------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| a         | b     | c      | d                                                                                                                                                                                    | e                  | f                       | g                                                                                    |
|           |       |        | Water                                                                                                                                                                                |                    |                         |                                                                                      |
|           |       |        | OL-Very thin soft layer<br>organic silt above sand                                                                                                                                   |                    |                         |                                                                                      |
|           | 5     |        |                                                                                                                                                                                      |                    |                         |                                                                                      |
|           | 10    |        |                                                                                                                                                                                      |                    |                         |                                                                                      |
| -13.5'    |       |        |                                                                                                                                                                                      |                    |                         |                                                                                      |
|           | 15    |        | SM-Tan, gray, silty, fine<br>grained sand                                                                                                                                            |                    | Jar 1                   | Spitspoon from 13.5' to<br>19.5'                                                     |
|           | 20    |        | Fine grained to medium grained,<br>slightly clayey, slight to<br>moderate resistance to knife<br>penetration from 19.5' to 24.5'                                                     | 50                 |                         | Pull #1, 19.5' to 24.5'<br>Run 5.0', Rec 4.0'<br>CI 1.0'                             |
|           | 25    |        | SM-Tan to gray, slightly<br>silty, very fine grained<br>sand with few thin layers<br>of SM sand, generally<br>slight resistance to<br>knife blade penetration<br>from 24.5' to 37.6' | 68                 |                         | Pull #2, 24.5' to 37.6'<br>Run 6.6', Rec 4.5'<br>CI 1.1'                             |
|           | 30    |        |                                                                                                                                                                                      |                    |                         |                                                                                      |
|           |       |        | - Continued on Sheet #2 -                                                                                                                                                            |                    |                         |                                                                                      |

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| DRILLING LOG (Cont Sheet)                                  |            | ELEVATION TOP OF HOLE<br>-13.5' |                                                                                                                                                 | Hole No. 3                   |                              |                                                                                           |
|------------------------------------------------------------|------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor<br>Widening and Deepening, Phase 2 |            | INSTALLATION Savannah, Ga.      |                                                                                                                                                 | SHEET 2<br>OF 2 SHEETS       |                              |                                                                                           |
| ELEVATION:<br>a                                            | DEPTH<br>b | LEGEND<br>c                     | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                               | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                                            | 35         |                                 | SH-Tan to gray, slightly silty, very fine grained sand                                                                                          | 52                           | 1                            | Pull #3, 31.1' to 35.3'<br>Run 4.2', Rec 2.2'<br>Cl 2.0'                                  |
| -37.6'                                                     |            |                                 |                                                                                                                                                 | 43                           |                              | Pull #4, 35.3' to 37.6'<br>Run 2.3', Rec 1.0'<br>Cl 1.3'                                  |
|                                                            | 40         |                                 | Compaction shale, gray; very fine grained, silt and sand layers of CL-sandy clay, moderate to fairly high resistance to knife blade penetration | 49                           |                              | Pull #5, 37.6' to 46.4'<br>Run 8.8', Rec 4.3'<br>Cl 4.5'                                  |
| -46.4                                                      |            |                                 | BOTTOM OF HOLE 46.4'                                                                                                                            |                              | 2                            |                                                                                           |
|                                                            |            |                                 | Soils field classified in accordance with the Unified Soils Classification System.                                                              |                              |                              |                                                                                           |

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| DRILLING LOG                                                                                                        |       | INSTALLATION                                                         |                                                                                                          | MO-E NO. 4                                                           |                   | SHEET 1 OF 2 SHEETS                                                                                          |                                                     |                                            |
|---------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|
| 1. PROJECT Savannah Harbor Widening and Deepening Phase 2                                                           |       | 10. SIZE AND TYPE OF BIT 1-3/8" Spitspoon/R Core Bit                 |                                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)                           |                   | MLW                                                                                                          |                                                     |                                            |
| 2. LOCATION (Coordinates or Station) See Plan                                                                       |       | 12. MANUFACTURER'S DESIGNATION OF DRILL Filling 314 C.D. #8          |                                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                            |                   | DISTURBED 1 UNDISTURBED 0                                                                                    |                                                     |                                            |
| 3. DRILLING AGENCY Savannah District                                                                                |       | 14. TOTAL NUMBER CORE BOXES 2                                        |                                                                                                          | 15. ELEVATION GROUND WATER 0.0 - Tidal                               |                   | 16. DATE HOLE STARTED 3 Apr 69 COMPLETED 3 Apr 69                                                            |                                                     |                                            |
| 4. HOLE NO. (As shown on drawing title and file number) 4                                                           |       | 17. ELEVATION TOP OF HOLE -13.5                                      |                                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING 69 %                              |                   | 19. SIGNATURE OF INSPECTOR Allen Merritt Robert L. Sleson, Geologist                                         |                                                     |                                            |
| 5. NAME OF DRILLER Creamer                                                                                          |       | 18. TOTAL CORE RECOVERY FOR BORING 69 %                              |                                                                                                          | 19. SIGNATURE OF INSPECTOR Allen Merritt Robert L. Sleson, Geologist |                   |                                                                                                              |                                                     |                                            |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DIO. FROM VERT. |       | 19. SIGNATURE OF INSPECTOR Allen Merritt Robert L. Sleson, Geologist |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |
| 7. THICKNESS OF OVERBURDEN                                                                                          |       |                                                                      |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |
| 8. DEPTH DRILLED INTO ROCK                                                                                          |       |                                                                      |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |
| 9. TOTAL DEPTH OF HOLE 44.6'                                                                                        |       |                                                                      |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |
| ELEVATION                                                                                                           | DEPTH | LEGEND                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                | % CORE RECOVERY                                                      | BOX OR SAMPLE NO. | REMARKS (Drilling parameters, test logs, weathering, etc., if significant)                                   |                                                     |                                            |
|                                                                                                                     | 5     |                                                                      | Water                                                                                                    |                                                                      |                   | <div style="border: 2px solid black; padding: 10px; text-align: center;"> <b>FOR INFORMATION ONLY</b> </div> |                                                     |                                            |
|                                                                                                                     | 11    |                                                                      |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |
| -13.5'                                                                                                              | 15    |                                                                      | SM-Gray, very fine grained, silty sand, slight resistance to knife blade penetration from 15.0' to 18.5' | 100                                                                  | Jar 1             |                                                                                                              |                                                     | Spitspoon 13.5' to 15.0'                   |
|                                                                                                                     | 20    |                                                                      | Moderate resistance to knife blade penetration from 18.5' to 24.6'                                       |                                                                      |                   |                                                                                                              |                                                     | Pull #1, 15.0' to 18.5' Run 3.5', Rec 3.5' |
|                                                                                                                     | 25    |                                                                      | Slight to moderate resistance to penetration of knife blade from 24.6' to 35.8'                          | 74                                                                   |                   |                                                                                                              | Pull #2, 18.5' to 24.6' Run 6.1', Rec 4.5' Cl 1.6'  |                                            |
|                                                                                                                     | 30    |                                                                      | Soft Layers                                                                                              | 60                                                                   | 1                 |                                                                                                              | Pull #3, 24.6' to 34.6' Run 10.0', Rec 6.0' Cl 4.0' |                                            |
| - Continued on Sheet #2 -                                                                                           |       |                                                                      |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |
| (Revised by Amendment No. 0001)                                                                                     |       |                                                                      |                                                                                                          |                                                                      |                   |                                                                                                              |                                                     |                                            |

| DRILLING LOG (Cont Sheet)                          |       |        | ELEVATION TOP OF HOLE<br>-13.5'                                                         |                    | Hole No. 4              |                                                                                      |
|----------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| Savannah Harbor<br>Deepening and Dredging, Phase 2 |       |        | INSTALLATION<br>Savannah, Ga.                                                           |                    | SHEET 2<br>OF 2 SHEETS  |                                                                                      |
| LOCATION                                           | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|                                                    | 35    |        | SM-Gray, very fine grained,<br>silty sand                                               |                    |                         |                                                                                      |
|                                                    | 40    |        | Compaction shale, moderate<br>resistance to penetration<br>with knife blade.            | 64                 |                         | Full #4, 34.6' to 44.6'<br>Run 10.0', Rec 6.4'<br>Cl 3.6'                            |
|                                                    | 44.6' |        | BOTTOM OF HOLE 44.6'                                                                    |                    |                         | Loss was left in hole<br>not washed away.                                            |
|                                                    | 45    |        | Soils field classified in accordance with<br>the Unified Soil<br>Classification System. |                    |                         |                                                                                      |

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| DRILLING LOG                                                                                                        |       |        | South Atlantic                                                                                                                                            |                 | INSTALLATION                                                                               | SHEET 1<br>OF 2 SHEETS                                                                                      |
|---------------------------------------------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 1. PROJECT Savannah Harbor Widening and Deepening, Phase 2                                                          |       |        | Savannah, Ga.                                                                                                                                             |                 | 10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon, R Core                                         |                                                                                                             |
| 2. LOCATION (Coordinates or Station) See Plan                                                                       |       |        |                                                                                                                                                           |                 | 11. DATUM FOR ELEVATION SHOWN (FIM or MSL) MSL                                             |                                                                                                             |
| 3. DRILLING AGENCY Savannah District                                                                                |       |        |                                                                                                                                                           |                 | 12. MANUFACTURER'S DESIGNATION OF DRILL Felling 314 C.D. #8                                |                                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file required) 5                                                         |       |        |                                                                                                                                                           |                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 1 Jar 0 UNDISTURBED                              |                                                                                                             |
| 5. NAME OF DRILLER Creamer                                                                                          |       |        |                                                                                                                                                           |                 | 14. TOTAL NUMBER CORE BOXES 2                                                              |                                                                                                             |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT. |       |        |                                                                                                                                                           |                 | 15. ELEVATION GROUND WATER 0.0 - Tidal                                                     |                                                                                                             |
| 7. THICKNESS OF OVERBURDEN                                                                                          |       |        |                                                                                                                                                           |                 | 16. DATE HOLE STARTED 26 Mar 69 COMPLETED 26 Mar 69                                        |                                                                                                             |
| 8. DEPTH DRILLED INTO ROCK                                                                                          |       |        |                                                                                                                                                           |                 | 17. ELEVATION TOP OF HOLE -15.0'                                                           |                                                                                                             |
| 9. TOTAL DEPTH OF HOLE 44.2'                                                                                        |       |        |                                                                                                                                                           |                 | 18. TOTAL CORE RECOVERY FOR BORING 60 %                                                    |                                                                                                             |
|                                                                                                                     |       |        | 19. SIGNATURE OF INSPECTOR Allen Herritt, Robert L. Sienon, Geol.                                                                                         |                 |                                                                                            |                                                                                                             |
| ELEVATION                                                                                                           | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                                                                                                 | % CORE RECOVERY | BOX OR SAMPLE NO.                                                                          | REMARKS (Drilling time, water loss, depth of penetration, etc., if available)                               |
|                                                                                                                     | 5     |        | Water                                                                                                                                                     |                 |                                                                                            | <div style="border: 2px solid black; padding: 5px; text-align: center;"> <b>FOR INFORMATION ONLY</b> </div> |
|                                                                                                                     | 10    |        | Thin layer of soft OL-organic silt above sand                                                                                                             |                 |                                                                                            |                                                                                                             |
| -15.0'                                                                                                              | 15    |        | SH-Gray-tan, silty, very fine grained sand, slightly micaceous, occasional silt layer, moderate resistance to knife blade penetration from 13.5' to 27.6' |                 | Jar 1 Splitspoon from 15.0' to 16.5'<br>Set 4" Casing to 19.0'<br>Wash from 16.5' to 18.5' |                                                                                                             |
|                                                                                                                     | 20    |        | Soft thin layers                                                                                                                                          | 66              |                                                                                            | Full #1, 10.5' to 27.6'<br>Run 9.1', Rec 6.0'<br>Cl 3.1'                                                    |
|                                                                                                                     | 25    |        | SH-Gray-tan, slightly silty, slightly clayey                                                                                                              |                 |                                                                                            |                                                                                                             |
|                                                                                                                     | 30    |        | Continued on Sheet #2                                                                                                                                     |                 |                                                                                            |                                                                                                             |
| (Revised by Amendment No. 0001)                                                                                     |       |        |                                                                                                                                                           |                 |                                                                                            |                                                                                                             |

| DRILLING LOG (Cont Sheet)                                  |       |        | ELEVATION TOP OF HOLE<br>-15.0'                                                                                                                       |                    | Hole No. 5              |                                                                                      |
|------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor<br>Widening and Deepening, Phase 2 |       |        | INSTALLATION Savannah, Ga.                                                                                                                            |                    | SHEET 2<br>OF 2 SHEETS  |                                                                                      |
| VARIATION                                                  | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                          | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                                                          | b     | c      | d                                                                                                                                                     | e                  | f                       | g                                                                                    |
|                                                            | 35    |        | SH-Gray-con, slightly silty,<br>slightly clayey, very fine<br>grained sand, slight<br>resistance to knife blade<br>penetration from 27.6' to<br>34.8' | 71                 | 1                       | Pull #2, 27.6' to 34.8'<br>Run 7.2', Rec 5.1'<br>Cl 2.1'                             |
|                                                            | 40    |        | Compaction shale, gray-<br>greenish gray, very fine<br>grained sand, moderate<br>resistance to knife pene-<br>tration from 34.8' to 44.2'             | 45                 |                         | Pull #3, 34.8' to 44.2'<br>Run 9.4', Rec 4.2'<br>Cl 5.2'                             |
|                                                            | 44.2' |        | BOTTOM OF HOLE 44.2'                                                                                                                                  |                    | 2                       |                                                                                      |
|                                                            | 45    |        | Soils field classified in<br>accordance with the Unified<br>Soil Classification System.                                                               |                    |                         |                                                                                      |

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| DRILLING LOG                                                                                                              |            | DIVISION                                   |                                            | INSTALLATION                                                                                  |                   | Hole No. <u>SN-12</u>                                                          |  |
|---------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| 1. PROJECT <u>SAVANNAH HARBOR</u>                                                                                         |            | 2. LOCATION <u>SOUTH ATLANTIC</u>          |                                            | 3. SIZE AND TYPE OF BIT <u>1 1/4" ID SPLITSPON</u>                                            |                   | 4. SHEET <u>1</u> OF <u>2</u> SHEETS                                           |  |
| 5. HOLE NO. (As shown on drawing title and file number) <u>SH-12</u>                                                      |            | 6. NAME OF DRILLER <u>J. W. SCOTT</u>      |                                            | 7. DATE HOLE <u>16 FEB. 1978</u>                                                              |                   | 8. COMPLETED <u>16 FEB. 1978</u>                                               |  |
| 9. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            | 10. THICKNESS OF OVERBURDEN <u>55.0'</u>   |                                            | 11. ELEVATION TOP OF HOLE <u>2.0 MLLW</u>                                                     |                   | 12. TOTAL CORE RECOVERY FOR BORING <u>1</u>                                    |  |
| 13. DEPTH DRILLED INTO ROCK <u>0.0'</u>                                                                                   |            | 14. TOTAL DEPTH OF HOLE <u>-55.0' MLLW</u> |                                            | 15. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>                                          |                   | 16. SIGNATURE OF DRILLER                                                       |  |
| ELEVATION                                                                                                                 | DEPTH      | LEGEND                                     | CLASSIFICATION OF MATERIALS (Description)  | % CORE RECOVERY                                                                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| <u>0.0 MLLW</u>                                                                                                           | <u>0'</u>  |                                            | <u>WATER</u>                               |                                                                                               |                   |                                                                                |  |
| <u>-2.5</u>                                                                                                               |            |                                            | <u>BOTTOM OF RIVER -2.5' MLLW</u>          |                                                                                               | <u>1</u>          | <u>BLOWS</u>                                                                   |  |
|                                                                                                                           | <u>5'</u>  |                                            | <u>MH - GREENISH GRAY SOFT CLAYEY SILT</u> |                                                                                               |                   | <u>NOTE: HEIGHT OF HAMMER, PUNED RODS WITH SPLITSPON FROM -2.5' TO -17.5'</u>  |  |
|                                                                                                                           | <u>10'</u> |                                            |                                            |                                                                                               |                   |                                                                                |  |
|                                                                                                                           | <u>15'</u> |                                            |                                            |                                                                                               |                   |                                                                                |  |
| <u>-17.5</u>                                                                                                              |            |                                            |                                            |                                                                                               | <u>2</u>          |                                                                                |  |
|                                                                                                                           | <u>20'</u> |                                            | <u>SP. TAN POORLY GRADED SAND</u>          |                                                                                               |                   |                                                                                |  |
|                                                                                                                           | <u>25'</u> |                                            |                                            |                                                                                               |                   |                                                                                |  |
| <u>30.0</u>                                                                                                               | <u>30'</u> |                                            | <u>CONTINUED ON SHEET 2</u>                |                                                                                               |                   |                                                                                |  |
| NOTE: Soils field classification in accordance with the Unified Soil Classification System.                               |            |                                            |                                            | BLOWS PER FOOT:<br>Number required to drive 1 1/4" ID splitspoon w/140 lb hammer falling 30". |                   |                                                                                |  |

| DRILLING LOG (Cont Sheet)      |       |        | 11 SEP 68                                                                         |                         | Hole No. <i>SH-12</i>   |                                                                                      |
|--------------------------------|-------|--------|-----------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT <i>Savannah Harbor</i> |       |        | INSTALLATION <i>O.D. M.L.W.</i>                                                   |                         | SHEET <i>2</i>          |                                                                                      |
| RINGS ISLAND THIRING BASIN     |       |        | SAVANNAH RIVER, GA.                                                               |                         | OF 2 SHEETS             |                                                                                      |
| ELEVATION                      | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                      | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                              | b     | c      | d                                                                                 | e                       | f                       | g                                                                                    |
|                                | 30'   |        |                                                                                   |                         | 3                       |                                                                                      |
|                                |       |        | SP. TAN POORLY GRADED<br>SAND                                                     |                         |                         | 30                                                                                   |
|                                |       |        |                                                                                   |                         |                         | 36                                                                                   |
|                                |       |        |                                                                                   |                         |                         | 40                                                                                   |
|                                | 35'   |        |                                                                                   |                         |                         | 58                                                                                   |
|                                |       |        | WITH SOME GRAVEL                                                                  |                         |                         | 61                                                                                   |
| <i>38.5</i>                    |       |        |                                                                                   |                         |                         | 67                                                                                   |
|                                | 40'   |        |                                                                                   |                         | 4                       | 40                                                                                   |
|                                |       |        | MH. GREEN HARD CLAYEY<br>SILT WITH SILT SAND<br>LAYERS AND TRACES<br>OF FINE MICA |                         |                         | 58                                                                                   |
|                                |       |        |                                                                                   |                         |                         | 66                                                                                   |
|                                | 45'   |        |                                                                                   |                         |                         | 81                                                                                   |
|                                |       |        |                                                                                   |                         |                         | 90                                                                                   |
|                                |       |        |                                                                                   |                         | 5                       | 79                                                                                   |
|                                | 50'   |        |                                                                                   |                         |                         | 100                                                                                  |
|                                |       |        |                                                                                   |                         |                         | 83                                                                                   |
|                                |       |        |                                                                                   |                         |                         | 100/0.9                                                                              |
|                                |       |        |                                                                                   |                         |                         | 94                                                                                   |
| <i>-55.0</i>                   | 55'   |        | BOTTOM OF HOLE<br>-55.0' M.L.W.                                                   |                         |                         | 90                                                                                   |

Hole No. SH-14

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                                         | INSTALLATION<br>Savannah River, Savannah, GA                                  |                                | SHEET 1<br>OF 3 SHEETS                                                                    |                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 1. PROJECT/Enlargement of Kings Island Luthing Basin                                                                         |            |                            |                                                                                         | 10. SIZE AND TYPE OF BIT 4" Auger, 1 3/8" ID                                  |                                |                                                                                           |                                                                                                 |
| 2. LOCATION (Coordinates or Station)<br>N 778,045 E 818,310                                                                  |            |                            |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (MLW or MSL) split spoon<br>MLW 7 1/2" Fishtail |                                |                                                                                           |                                                                                                 |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME-75                             |                                |                                                                                           |                                                                                                 |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-14                                                             |            |                            |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                    |                                | DISTURBED 17<br>UNDISTURBED 0                                                             |                                                                                                 |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |            |                            |                                                                                         | 14. TOTAL NUMBER CORE BOXES                                                   |                                |                                                                                           |                                                                                                 |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                         | 15. ELEVATION GROUND WATER 15.1'                                              |                                |                                                                                           |                                                                                                 |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |            |                            |                                                                                         | 16. DATE HOLE                                                                 |                                | STARTED 16 May 78<br>COMPLETED 18 May 78                                                  |                                                                                                 |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                         | 17. ELEVATION TOP OF HOLE -20.5' MLW 25.0                                     |                                |                                                                                           |                                                                                                 |
| 9. TOTAL DEPTH OF HOLE 81.0'                                                                                                 |            |                            |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING                                            |                                |                                                                                           |                                                                                                 |
|                                                                                                                              |            |                            |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>DAWN MARIE HARTLEY                              |                                |                                                                                           |                                                                                                 |
| ELEVATION<br>e                                                                                                               | DEPTH<br>d | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | 1 CORE<br>RECOVERY<br>e                                                       | NO. OF<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |                                                                                                 |
| 25.0'                                                                                                                        | 0          |                            | SM - Orange-brown, fine to medium grained, silty sand, moist, w/mica flakes             |                                                                               | 1                              | 7                                                                                         | W. T. 18.5'                                                                                     |
|                                                                                                                              | 5          |                            |                                                                                         |                                                                               |                                | 7                                                                                         | Date 16 May 78                                                                                  |
|                                                                                                                              |            |                            |                                                                                         |                                                                               |                                | 3                                                                                         | Depth to water during drilling.                                                                 |
|                                                                                                                              | 10         |                            | W/thin, tan, clay layers                                                                |                                                                               | 2                              | 7                                                                                         |                                                                                                 |
|                                                                                                                              |            |                            |                                                                                         |                                                                               |                                | 18                                                                                        | W. T. 9.9'                                                                                      |
|                                                                                                                              | 15         |                            |                                                                                         |                                                                               |                                | 22                                                                                        | Water table reading 24 hrs. after hole completed.                                               |
|                                                                                                                              |            |                            | Gray fine grained w/a little clay, damp                                                 |                                                                               | 3                              | 22                                                                                        |                                                                                                 |
|                                                                                                                              | 20         |                            | Orange-tan, fine to medium grained, wet                                                 |                                                                               | 4                              | 18                                                                                        |                                                                                                 |
| 5.0'                                                                                                                         |            |                            | SC - Gray, fine grained, clayey sand, saturated                                         |                                                                               | 5                              | 6                                                                                         |                                                                                                 |
|                                                                                                                              | 25         |                            |                                                                                         |                                                                               |                                | 4                                                                                         |                                                                                                 |
|                                                                                                                              |            |                            | W/ occasional clay layers                                                               |                                                                               | 6                              | 8                                                                                         |                                                                                                 |
|                                                                                                                              | 30         |                            |                                                                                         |                                                                               |                                | 12                                                                                        |                                                                                                 |
|                                                                                                                              |            |                            | Continued on sheet 2                                                                    |                                                                               |                                | 9                                                                                         |                                                                                                 |
|                                                                                                                              |            |                            | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                                               |                                |                                                                                           |                                                                                                 |
|                                                                                                                              |            |                            |                                                                                         |                                                                               |                                |                                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID split spoon w/ 140 lb. hammer falling 30" |

| DRILLING LOG (Cont Sheet)                       |            | Hole No. SR-14                                                             |                                                                                   |
|-------------------------------------------------|------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Enlargement of Kings Island Turning             |            | Savannah River, Savannah, GA                                               |                                                                                   |
| Basin Classification of Materials (Description) |            | SHEET 2 OF 2 SHEETS                                                        |                                                                                   |
| ELEVATION<br>a                                  | DEPTH<br>b | LEGEND<br>c                                                                | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |
| - 6.0'                                          | 30         | SC - Gray, fine grained clayey sand, w/occasional clay layers saturated    | 77                                                                                |
|                                                 | 35         | SM - Gray-brown, medium to fine grained silty sand, saturated              | 18                                                                                |
|                                                 | 40         | Fine to medium grained w/fine gravel and gray clay layers                  | 25                                                                                |
|                                                 | 45         | Gray, fine grained, no gravel                                              | 25                                                                                |
|                                                 | 50         | No clay, w/a fine gravel layer                                             | 12                                                                                |
|                                                 | 55         | Fine to medium grained                                                     | 18                                                                                |
|                                                 | 60         | Traces of decomposing organic matter                                       | 24                                                                                |
| -30.5'                                          | 65         | SC - Gray, fine grained, clayey sand                                       | 28                                                                                |
| -32.5'                                          | 70         | SM - Gray, fine to medium grained silty sand                               | 30                                                                                |
|                                                 | 75         | w/fine gravel                                                              | 22                                                                                |
|                                                 | 80         | Coarse grained w/gray clay patches                                         | 50                                                                                |
|                                                 | 85         | No clay                                                                    | 40                                                                                |
| -44.0'                                          | 90         | MH - Dark gray-green, plastic silt, w/ fine mica flakes & some fine gravel | 26                                                                                |
|                                                 | 95         |                                                                            | 26                                                                                |
|                                                 | 100        |                                                                            | 40                                                                                |
|                                                 | 105        |                                                                            | 39                                                                                |
|                                                 | 110        |                                                                            | 45                                                                                |
|                                                 | 115        |                                                                            | 58                                                                                |
|                                                 | 120        |                                                                            | 50                                                                                |
|                                                 | 125        |                                                                            | 55                                                                                |
|                                                 | 130        |                                                                            | 51                                                                                |
|                                                 | 135        |                                                                            | 30                                                                                |
|                                                 | 140        |                                                                            | 23                                                                                |
|                                                 | 145        |                                                                            | 34                                                                                |

| DRILLING LOG (Cont Sheet)           |              | 4 TOP OF HOLE<br>25.0'                       |                                                                                                                           | Hole No. SH-14               |                              |                                                                                           |            |
|-------------------------------------|--------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|------------|
| enlargement of Kings Island Turning |              | INSTALLATION<br>Savannah River, Savannah, GA |                                                                                                                           | SHEET 3<br>OF 3 SHEETS       |                              |                                                                                           |            |
| ELEVATION<br>a                      | DEPTH<br>79. | LEGEND<br>c                                  | Basin CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                   | % CORE<br>RECOV.<br>EST<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g | BLOWS<br>h |
|                                     |              |                                              | MH - Dark gray-green plastic<br>silt w/patches of fine grain<br>gray sand throughout, w/fine<br>mica flakes but no gravel |                              | 15                           |                                                                                           | 25         |
|                                     |              |                                              |                                                                                                                           |                              |                              |                                                                                           | 27         |
|                                     |              |                                              |                                                                                                                           |                              |                              |                                                                                           | 70         |
|                                     | 75           |                                              |                                                                                                                           |                              |                              |                                                                                           | 27         |
|                                     |              |                                              |                                                                                                                           |                              | 16                           |                                                                                           | 65         |
|                                     |              |                                              |                                                                                                                           |                              |                              |                                                                                           | 70         |
|                                     |              |                                              |                                                                                                                           |                              |                              |                                                                                           | 27         |
| -56.0                               | 80           |                                              | Approximately 50% sand                                                                                                    |                              | 17                           |                                                                                           | 90         |
|                                     |              |                                              | Bottom of hole 81.0'                                                                                                      |                              |                              |                                                                                           |            |
|                                     | 85           |                                              |                                                                                                                           |                              |                              |                                                                                           |            |

Hole No. SH-17

| DRILLING LOG                                               |            | DIVISION<br>South Atlantic                                                                                                   |                                                                                                                                   | INSTALLATION<br>Savannah River, Savannah, GA                    |                                | SHEET 1<br>OF 3 SHEETS                                                                                  |    |
|------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------|----|
| 1. PROJECT<br>Enlargement of Kings Island<br>Turning Basin |            | 2. LOCATION (Coordinates as shown)                                                                                           |                                                                                                                                   | 10. SIZE AND TYPE OF BIT<br>3/8" ID Splitspoon                  |                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)                                                              |    |
| 3. DRILLING AGENCY<br>Savannah District                    |            | 4. HOLE NO. (As shown on drawing title and file number)<br>SH-17                                                             |                                                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CHE 75               |                                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN<br>DISTURBED<br>UNDISTURBED                              |    |
| 5. NAME OF DRILLER<br>T. W. Scott                          |            | 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                                                   | 14. TOTAL NUMBER CORE BOXES                                     |                                | 15. ELEVATION GROUND WATER                                                                              |    |
| 7. THICKNESS OF OVERBURDEN<br>81.0'                        |            | 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |                                                                                                                                   | 16. DATE HOLE<br>STARTED<br>18 May 78<br>COMPLETED<br>25 May 78 |                                | 17. ELEVATION TOP OF HOLE<br>25.0' MLL                                                                  |    |
| 9. TOTAL DEPTH OF HOLE<br>81.0'                            |            | 18. SIGNATURE OF INSPECTOR<br>DAWN MARIE HARTLEY                                                                             |                                                                                                                                   | 19. TOTAL CORE RECOVERY FOR BORING<br>%                         |                                | 20. SIGNATURE OF INSPECTOR<br>DAWN MARIE HARTLEY                                                        |    |
| ELEVATION<br>+                                             | DEPTH<br>0 | LEGEND<br>+                                                                                                                  | CLASSIFICATION OF MATERIALS<br>(Description)<br>+                                                                                 | % CORE<br>RECOVERY<br>+                                         | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>penetration, etc., if significant)<br>BLOWS          |    |
|                                                            |            |                                                                                                                              | SM - Orange-tan, fine to med-<br>ium grained silty sand, damp<br>with a little clay and a trace<br>of fine gravel and mica flakes |                                                                 | 1                              |                                                                                                         | 30 |
|                                                            |            |                                                                                                                              | Clay in thin layers only                                                                                                          |                                                                 |                                |                                                                                                         | 50 |
|                                                            |            |                                                                                                                              | 15% clay                                                                                                                          |                                                                 | 2                              |                                                                                                         | 40 |
|                                                            |            |                                                                                                                              | Only a trace of clay                                                                                                              |                                                                 |                                |                                                                                                         | 30 |
|                                                            |            |                                                                                                                              | No clay                                                                                                                           |                                                                 | 3                              |                                                                                                         | 70 |
|                                                            |            |                                                                                                                              | Fine grained                                                                                                                      |                                                                 |                                |                                                                                                         | 60 |
|                                                            |            |                                                                                                                              | Gray, wet, no gravel                                                                                                              |                                                                 | 4                              |                                                                                                         | 33 |
|                                                            |            |                                                                                                                              | 10-15% plastic silt                                                                                                               |                                                                 | 5                              |                                                                                                         | 33 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 | 6                              |                                                                                                         | 28 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 16 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 12 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 18 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 14 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 99 |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 4  |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 5  |
|                                                            |            |                                                                                                                              |                                                                                                                                   |                                                                 |                                |                                                                                                         | 10 |
|                                                            |            |                                                                                                                              | Continued on sheet 2                                                                                                              |                                                                 |                                | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID Splitspoon<br>4/140 lb. hammer falling<br>80". |    |

| DRILLING LOG (Cont Sheet)           |       |                                           | 25.0' MLW                                                                                        | Hole No. SH-17          |                                |                                                                                      |
|-------------------------------------|-------|-------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT Enlargement of Kings Island |       | INSTALLATION Savannah River, Savannah, GA |                                                                                                  | SHEET 2 OF 3 SHEETS     |                                |                                                                                      |
| TURNING BASIN                       |       |                                           |                                                                                                  |                         |                                |                                                                                      |
| ELEVATION                           | DEPTH | LEGEND                                    | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOV.<br>EST | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                                   | 30    | c                                         | d                                                                                                | e                       |                                | B.                                                                                   |
|                                     |       |                                           | SM - Gray fine grained silty sand with mica flakes and green and dark brown plastic silty layers |                         |                                | 20                                                                                   |
|                                     |       |                                           | No silt, with organic matter                                                                     |                         | 7                              | 16                                                                                   |
|                                     | 35    |                                           | No organic matter                                                                                |                         |                                | 26                                                                                   |
|                                     |       |                                           |                                                                                                  |                         | 8                              | 14                                                                                   |
|                                     | 40    |                                           |                                                                                                  |                         |                                | 36                                                                                   |
|                                     |       |                                           |                                                                                                  |                         |                                | 36                                                                                   |
|                                     |       |                                           |                                                                                                  |                         |                                | 38                                                                                   |
|                                     |       |                                           | Fine to medium grained                                                                           |                         | 9                              | 36                                                                                   |
|                                     | 45    |                                           | With wood chunks                                                                                 |                         |                                | 44                                                                                   |
|                                     |       |                                           | Fine grained, without wood chunks                                                                |                         |                                | 20                                                                                   |
|                                     | 50    |                                           |                                                                                                  |                         | 10                             | 36                                                                                   |
|                                     |       |                                           |                                                                                                  |                         |                                | 38                                                                                   |
|                                     | 55    |                                           | Fine to medium grained                                                                           |                         | 11                             | 46                                                                                   |
|                                     |       |                                           | Medium to fine grained with small gray clay patches                                              |                         |                                | 30                                                                                   |
|                                     | 60    |                                           | Medium grained                                                                                   |                         | 12                             | 34                                                                                   |
|                                     |       |                                           | Medium to coarse grained                                                                         |                         |                                | 45                                                                                   |
|                                     | 65    |                                           | With wood chunks                                                                                 |                         |                                | 36                                                                                   |
|                                     |       |                                           | Fine to medium grained, no wood chunks, with a trace of clay                                     |                         | 13                             | 50                                                                                   |
|                                     | 70    |                                           | MH - Dark green plastic silt with small pockets of sand throughout, with fine mica flakes        |                         |                                | 50                                                                                   |
|                                     |       |                                           | Continued on sheet 3                                                                             |                         |                                | 36                                                                                   |

| DRILLING LOG (Cont Sheet)   |       | FILE # TOP OF HOLE           |                                                                                                     | 25.0' MLW         |                         | Hole No. SH-17                                                                       |       |
|-----------------------------|-------|------------------------------|-----------------------------------------------------------------------------------------------------|-------------------|-------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                     |       | INSTALLATION                 |                                                                                                     | SHEET             |                         | OF 3 SHEETS                                                                          |       |
| Enlargement of Kings Island |       | Savannah River, Savannah, GA |                                                                                                     | 3                 |                         |                                                                                      |       |
| Turning Basin               |       |                              |                                                                                                     |                   |                         |                                                                                      |       |
| ELEVATION                   | DEPTH | LOG #                        | CLASSIFICATION OF MATERIALS<br>(Description)                                                        | % CORE<br>RECOVER | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS |
| a                           | 70    | c                            | d                                                                                                   | e                 | JAR                     | f                                                                                    |       |
|                             |       |                              | MH - Dark green plastic silt,<br>with fine mica flakes and<br>small pockets of sand through-<br>out |                   |                         |                                                                                      | 100   |
|                             |       |                              | No sand                                                                                             |                   | 14                      |                                                                                      | 89    |
|                             | 75    |                              |                                                                                                     |                   |                         |                                                                                      | 55    |
|                             |       |                              |                                                                                                     |                   |                         |                                                                                      | 30    |
|                             |       |                              |                                                                                                     |                   |                         |                                                                                      | 31    |
|                             |       |                              |                                                                                                     |                   |                         |                                                                                      | 36    |
|                             | 80    |                              | With occasional thin gray<br>fine grained sand lenses                                               |                   | 15                      |                                                                                      | 40    |
|                             |       |                              |                                                                                                     |                   |                         |                                                                                      | 30    |
|                             |       |                              | Bottom of Hole 81.0'                                                                                |                   |                         |                                                                                      |       |



Hole No. SH-18

| DRILLING LOG                                                                                                                 |             | DIVISION       | INSTALLATION                                                                            |                         | SHEET 1<br>OF 2 SHEETS         |                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-----------------------------------------------------------------------------------------|-------------------------|--------------------------------|------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Enlargement of Kings Island<br>Turnpike Basin                                                                  |             | South Atlantic | Savannah River, Savannah, GA                                                            |                         |                                |                                                                                                |
| 2. LOCATION (Coordinates or Station)                                                                                         |             |                | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Split spoon                                       |                         |                                |                                                                                                |
| N777075 E818800                                                                                                              |             |                | 11. DATUM FOR ELEVATION SHOW (TBM or MLL)                                               |                         | 4" Auger                       |                                                                                                |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                       |                         | 7" Fish tail                   |                                                                                                |
| 4. HOLE NO. (As shown on drawing title<br>and file number)                                                                   |             | SH-18          | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                          |                         | 12                             | UNDISTURBED<br>0                                                                               |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |             |                | 14. TOTAL NUMBER CORE BOXES                                                             |                         |                                |                                                                                                |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DES. FROM VERT. |             |                | 15. ELEVATION GROUND WATER                                                              |                         |                                |                                                                                                |
| 7. THICKNESS OF OVERBURDEN<br>67.5'                                                                                          |             |                | 16. DATE HOLE<br>STARTED 1 Jun 78 COMPLETED 12 Jun 78                                   |                         |                                |                                                                                                |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                | 17. ELEVATION TOP OF HOLE<br>12.7' MLW                                                  |                         |                                |                                                                                                |
| 9. TOTAL DEPTH OF HOLE<br>67.5'                                                                                              |             |                | 18. TOTAL CORE RECOVERY FOR BORING<br>1                                                 |                         |                                |                                                                                                |
|                                                                                                                              |             |                | 19. SIGNATURE OF INSPECTOR<br>DAWN MARIE HARTLEY                                        |                         |                                |                                                                                                |
| ELEVATION<br>=                                                                                                               | DEPTH<br>0= | LEGEND<br>=    | CLASSIFICATION OF MATERIALS<br>(Description)<br>=                                       | % CORE<br>RECOVERY<br>= | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>measuring, etc., if significant)<br>=       |
|                                                                                                                              |             |                | SC - Orange-tan, fine to medium grained clayey sand, moist, with gray clay layers       |                         | 1                              | W. T. 4.0'<br>Date 1 Jun 78<br>Depth to water during drilling.                                 |
|                                                                                                                              | 5           |                | Saturated                                                                               |                         |                                |                                                                                                |
|                                                                                                                              |             |                | SM - Brown, gray, fine grained, silty sand with occasional clay layers                  |                         | 2                              | W. T. 3.5'<br>Water Table reading 24 hrs. after hole completed.                                |
|                                                                                                                              | 10          |                | OL - Dark brown, soft fat, clayey organic silt                                          |                         | 3                              |                                                                                                |
|                                                                                                                              |             |                | SM - tan, gray, fine grained silty sand with fine mica flakes                           |                         | 4                              |                                                                                                |
|                                                                                                                              | 15          |                | Gray                                                                                    |                         |                                |                                                                                                |
|                                                                                                                              | 20          |                |                                                                                         |                         | 5                              |                                                                                                |
|                                                                                                                              | 25          |                | MI - Gray-green, soft plastic silt with a trace of organic matter                       |                         | 6                              |                                                                                                |
|                                                                                                                              |             |                | SM - Gray, fine to medium grained silty sand                                            |                         | 7                              |                                                                                                |
|                                                                                                                              | 30          |                | fine gravel layer with occasional thin gray clay layers                                 |                         |                                |                                                                                                |
|                                                                                                                              |             |                | Continued on sheet 2                                                                    |                         |                                |                                                                                                |
|                                                                                                                              |             |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                         |                                |                                                                                                |
|                                                                                                                              |             |                |                                                                                         |                         |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID split-spoon w/140 lb. hammer falling 30" |

| DRILLING LOG (Cont Sheet) |       |                             | 12.7' MLW                                                                |                         | Hole No. SH-18          |                                                                                      |  |             |    |
|---------------------------|-------|-----------------------------|--------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|--|-------------|----|
| PROJECT                   |       | Enlargement of Kings Island |                                                                          | INSTALLATION            |                         | Savannah River, Savannah, GA                                                         |  | SHEET 2     |    |
| TURNING BASIN             |       |                             |                                                                          |                         |                         |                                                                                      |  | OF 2 SHEETS |    |
| ELEVATION                 | DEPTH | LEGEND                      | CLASSIFICATION OF MATERIALS<br>(Description)                             | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  | BLOWS       |    |
|                           | 30    |                             | SH - Gray, fine grained silty sand with occasional thin gray clay layers |                         | 8                       |                                                                                      |  |             | 22 |
|                           |       |                             | With a thin layer of fine gravel                                         |                         |                         |                                                                                      |  |             | 16 |
|                           | 35    |                             | With mica flakes but no clay or gravel                                   |                         |                         |                                                                                      |  |             | 22 |
|                           |       |                             | Fine to medium grained                                                   |                         |                         |                                                                                      |  |             | 20 |
|                           |       |                             | Medium to coarse grained with some fine gravel                           |                         | 9                       |                                                                                      |  |             | 15 |
|                           | 40    |                             |                                                                          |                         |                         |                                                                                      |  |             | 30 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 20 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 27 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 33 |
|                           | 45    |                             | Fine grained, no gravel                                                  |                         |                         |                                                                                      |  |             | 38 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 30 |
|                           |       |                             |                                                                          |                         | 10                      |                                                                                      |  |             | 33 |
|                           | 50    |                             |                                                                          |                         |                         |                                                                                      |  |             | 34 |
|                           |       |                             | MF - Green plastic silt with fine mica flakes                            |                         |                         |                                                                                      |  |             | 49 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 40 |
|                           | 55    |                             |                                                                          |                         |                         |                                                                                      |  |             | 41 |
|                           |       |                             |                                                                          |                         | 11                      |                                                                                      |  |             | 49 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 57 |
|                           | 60    |                             |                                                                          |                         |                         |                                                                                      |  |             | 89 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 40 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 40 |
|                           | 65    |                             |                                                                          |                         |                         |                                                                                      |  |             | 80 |
|                           |       |                             |                                                                          |                         | 12                      |                                                                                      |  |             | 33 |
|                           |       |                             |                                                                          |                         |                         |                                                                                      |  |             | 41 |
|                           |       |                             | Bottom of Hole 67.5'                                                     |                         |                         |                                                                                      |  |             |    |
|                           | 70    |                             |                                                                          |                         |                         |                                                                                      |  |             |    |

Hole No. SH-20

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                                 | INSTALLATION<br>Savannah River, Savannah, GA                                        |                                | SHEET 1<br>OF 2 SHEETS                                                                    |    |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|----|
| 1. PROJECT Enlargement of Kings Island<br>Turning Basin                                                                      |            |                            |                                                                                 | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon                                       |                                |                                                                                           |    |
| 2. LOCATION (Coordinates or Station)<br>N775665 E819180                                                                      |            |                            |                                                                                 | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL) 4" Auger<br>7" Fishra                    |                                |                                                                                           |    |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 45; CME 75                           |                                |                                                                                           |    |
| 4. HOLE NO. (As shown on drawing title<br>and file number) SH-20                                                             |            |                            |                                                                                 | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN: DISTURBED 15 UNDISTURBED 0          |                                |                                                                                           |    |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |            |                            |                                                                                 | 14. TOTAL NUMBER CORE BOXES                                                         |                                |                                                                                           |    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                 | 15. ELEVATION GROUND WATER                                                          |                                |                                                                                           |    |
| 7. THICKNESS OF OVERBURDEN 70.5'                                                                                             |            |                            |                                                                                 | 16. DATE HOLE STARTED 24 Apr 78 COMPLETED 30 May 78                                 |                                |                                                                                           |    |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                 | 17. ELEVATION TOP OF HOLE 13.5' MLW                                                 |                                |                                                                                           |    |
| 9. TOTAL DEPTH OF HOLE 70.5'                                                                                                 |            |                            |                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING 1                                                |                                |                                                                                           |    |
|                                                                                                                              |            |                            |                                                                                 | 19. SIGNATURE OF INSPECTOR<br>C. GRIFFIN/D. HARLEY                                  |                                |                                                                                           |    |
| ELEVATION<br>s                                                                                                               | DEPTH<br>G | LEGEND<br>s                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                               | % CORE<br>RECOV-<br>ERY<br>s                                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |    |
|                                                                                                                              |            |                            | HL - tan inorganic silt with<br>traces of fine sand and mica                    |                                                                                     | 1                              |                                                                                           | 7  |
|                                                                                                                              |            |                            | Becomes more sandy                                                              |                                                                                     |                                |                                                                                           |    |
|                                                                                                                              |            |                            | SM - Dark gray and brown,<br>fine to medium silty sand<br>with soft silt layers |                                                                                     | 2                              | W. T. 5.0'                                                                                | 12 |
|                                                                                                                              | 5          |                            | Dark gray and green, fine<br>grained, saturated, with no<br>silt layers         |                                                                                     | 3                              | Date 24 Apr 78<br>Depth to water<br>during drilling.                                      | 8  |
|                                                                                                                              |            |                            | Dark green with gray layers                                                     |                                                                                     |                                | W. T. 3.5'                                                                                | 7  |
|                                                                                                                              | 10         |                            | Gray with some pieces of<br>rotten wood, no clay                                |                                                                                     | 4                              | Water table reading<br>24 hrs. after hole<br>completed.                                   | 7  |
|                                                                                                                              |            |                            | Green, no wood                                                                  |                                                                                     |                                |                                                                                           | 7  |
|                                                                                                                              | 15         |                            | MH - Dark brown, soft fat<br>clayey silt with traces of<br>fine mica            |                                                                                     | 5                              |                                                                                           | 2  |
|                                                                                                                              |            |                            |                                                                                 |                                                                                     |                                |                                                                                           | 0  |
|                                                                                                                              | 20         |                            | With tan sand layers                                                            |                                                                                     |                                |                                                                                           | 3  |
|                                                                                                                              |            |                            | SM - Brown, fine to medium<br>grained silty sand                                |                                                                                     | 6                              |                                                                                           | 0  |
|                                                                                                                              |            |                            | Tan and brown                                                                   |                                                                                     |                                |                                                                                           | 1  |
|                                                                                                                              | 25         |                            | Gray, fine grained                                                              |                                                                                     | 7                              |                                                                                           | 4  |
|                                                                                                                              |            |                            |                                                                                 |                                                                                     |                                |                                                                                           | 9  |
|                                                                                                                              |            |                            |                                                                                 |                                                                                     |                                |                                                                                           | 8  |
|                                                                                                                              | 30         |                            |                                                                                 |                                                                                     |                                |                                                                                           | 10 |
|                                                                                                                              |            |                            |                                                                                 |                                                                                     |                                |                                                                                           | 11 |
|                                                                                                                              |            |                            |                                                                                 |                                                                                     |                                |                                                                                           | 20 |
|                                                                                                                              |            |                            |                                                                                 |                                                                                     |                                |                                                                                           | 1  |
| Continued on sheet 2                                                                                                         |            |                            |                                                                                 | BLOWS PER FOOT:                                                                     |                                |                                                                                           |    |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                                |            |                            |                                                                                 | Number required to drive<br>1 3/8" ID Splitspoon<br>w/140 lb. hammer falling<br>20" |                                |                                                                                           |    |

| DRILLING LOG (Cont Sheet)                         |             |             | REV 1 TOP OF HOLE 13.5' MLW                                                       | Hole No. SB-20               |                              |                                                                                           |            |
|---------------------------------------------------|-------------|-------------|-----------------------------------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|------------|
| PROJECT Enlargement of Kings Island Turning Basin |             |             | INSTALLATION Savannah River, Savannah, GA                                         | SHEET 2 OF 2 SHEETS          |                              |                                                                                           |            |
| ELEVATION<br>a                                    | DEPTH<br>30 | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                 | % CORE<br>RECOV.<br>ENT<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g | BLOWS<br>h |
|                                                   |             |             | SM - Tan, gray, medium grained<br>silty sand with occasional<br>large size gravel |                              |                              |                                                                                           | 16         |
|                                                   |             |             | Gray with gray clay layers                                                        |                              |                              |                                                                                           | 16         |
|                                                   |             |             |                                                                                   |                              | 8                            |                                                                                           | 15         |
|                                                   | 35          |             |                                                                                   |                              |                              |                                                                                           | 40         |
|                                                   |             |             | No gravel                                                                         |                              |                              |                                                                                           | 35         |
|                                                   |             |             |                                                                                   |                              | 9                            |                                                                                           | 42         |
|                                                   | 40          |             | No Clay                                                                           |                              | 10                           |                                                                                           | 45         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 24         |
|                                                   |             |             | With patches of green silt                                                        |                              |                              |                                                                                           | 46         |
|                                                   | 45          |             |                                                                                   |                              |                              |                                                                                           | 36         |
|                                                   |             |             | No silt                                                                           |                              | 11                           |                                                                                           | 30         |
|                                                   |             |             | With small gray clay patches                                                      |                              |                              |                                                                                           | 30         |
|                                                   | 50          |             |                                                                                   |                              | 12                           |                                                                                           | 5          |
|                                                   |             |             | SM - Green plastic silt with<br>occasional fine grained sand<br>lenses            |                              |                              |                                                                                           | 18         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 36         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 26         |
|                                                   | 55          |             | With fine mica flakes                                                             |                              | 13                           |                                                                                           | 26         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 35         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 32         |
|                                                   | 60          |             |                                                                                   |                              |                              |                                                                                           | 40         |
|                                                   |             |             | No sand lenses                                                                    |                              | 14                           |                                                                                           | 42         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 42         |
|                                                   | 65          |             |                                                                                   |                              |                              |                                                                                           | 40         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 40         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 44         |
|                                                   |             |             |                                                                                   |                              |                              |                                                                                           | 80         |
|                                                   | 70          |             |                                                                                   |                              | 15                           |                                                                                           | 60         |
|                                                   |             |             | Bottom of Hole 70.5'                                                              |                              |                              |                                                                                           |            |

| DRILLING LOG                                            |       | DIVISION                                                                                             |                                                                                         | INSTALLATION                                   |                   | Hole No. SH-22                                                                 |       |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------|-------------------|--------------------------------------------------------------------------------|-------|
| 1. PROJECT                                              |       | South Atlantic                                                                                       |                                                                                         | Savannah River, Savannah, GA                   |                   | SHEET 1 OF 2 SHEETS                                                            |       |
| 2. LOCATION (Coordinate or Station)                     |       | N776200 E819310                                                                                      |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID Split spoon |                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MLW) MLW 6" AUGER                        |       |
| 3. DRILLING AGENCY                                      |       | Savannah District                                                                                    |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL CME 75 |                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                     |       |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-22                                                                                                |                                                                                         | 14. TOTAL NUMBER CORE BOXES                    |                   | 15. ELEVATION GROUND WATER                                                     |       |
| 5. NAME OF DRILLER                                      |       | T. W. Scott                                                                                          |                                                                                         | 16. DATE HOLE                                  |                   | STARTED 30 May 78 COMPLETED 1 Jun. 78                                          |       |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                         | 17. ELEVATION TOP OF HOLE                      |                   | 12.5' MLW                                                                      |       |
| 7. THICKNESS OF OVERBURDEN                              |       | 67.5'                                                                                                |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING             |                   | 3                                                                              |       |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                                                 |                                                                                         | 19. SIGNATURE OF INSPECTOR                     |                   | DAWN MARIE HARTLEY                                                             |       |
| 9. TOTAL DEPTH OF HOLE                                  |       | 67.5'                                                                                                |                                                                                         |                                                |                   |                                                                                |       |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                                | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |       |
|                                                         |       |                                                                                                      |                                                                                         |                                                | JAR               |                                                                                | BLOWS |
|                                                         |       |                                                                                                      | SM - Brown, fine grained silty sand, moist, with mica flakes, with organic matter       |                                                | 1                 |                                                                                | 12    |
|                                                         |       |                                                                                                      | SC - Tan, fine grained clayey sand, damp, with mica flakes                              |                                                | 2                 | W. T. 6.0'                                                                     | 23    |
|                                                         |       |                                                                                                      | SM - Orange-tan, fine to medium grained silty sand, damp, with mica flakes              |                                                |                   | Date 30 May 78                                                                 | 25    |
|                                                         |       |                                                                                                      | Saturated                                                                               |                                                |                   | Depth to water during drilling.                                                | 6     |
|                                                         |       |                                                                                                      | MH - Dark brown, soft fat clayey silt, with fine mica flakes                            |                                                | 3                 | W. T. 4.3'                                                                     | 6     |
|                                                         |       |                                                                                                      | SM - Light gray, fine grained silty sand, with mica flakes                              |                                                | 4                 | Water table reading 24 hrs. after hole completed.                              | 7     |
|                                                         |       |                                                                                                      | With occasional thin layers of organic matter                                           |                                                |                   |                                                                                | 16    |
|                                                         |       |                                                                                                      |                                                                                         |                                                | 5                 |                                                                                | 9     |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   |                                                                                | 15    |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   |                                                                                | 12    |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   |                                                                                | 12    |
|                                                         |       |                                                                                                      | No organic layers                                                                       |                                                | 6                 |                                                                                | 15    |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   |                                                                                | 12    |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   |                                                                                | 12    |
|                                                         |       |                                                                                                      | With occasional organic layers                                                          |                                                |                   |                                                                                | 12    |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   |                                                                                | 12    |
|                                                         |       |                                                                                                      |                                                                                         |                                                | 7                 |                                                                                | 14    |
|                                                         |       |                                                                                                      | Continued on sheet 2                                                                    |                                                |                   |                                                                                |       |
|                                                         |       |                                                                                                      | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                |                   |                                                                                |       |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   | BLOWS PER FOOT:                                                                |       |
|                                                         |       |                                                                                                      |                                                                                         |                                                |                   | Number required to drive 1 3/8" ID split spoon w/140 lb. hammer falling 30"    |       |

| DRILLING LOG (Cont Sheet) |       | REV. 1 TOP OF HOLE          |                                                                                                | 12.5' MLW           |                         | Hole No. SH-22                                                                       |       |
|---------------------------|-------|-----------------------------|------------------------------------------------------------------------------------------------|---------------------|-------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                   |       | Enlargement of Kings Island |                                                                                                | INSTALLATION        |                         | Savannah River, Savannah, GA.                                                        |       |
| Turning Basin             |       |                             |                                                                                                |                     |                         | SHEET 2                                                                              |       |
| OF 2 SHEETS               |       |                             |                                                                                                |                     |                         |                                                                                      |       |
| ELEVATION                 | DEPTH | LEGEND                      | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOVERED | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS |
| a                         | b     | c                           | d                                                                                              | e                   | f                       | g                                                                                    | h     |
|                           | 30    |                             | SM - Light gray, fine grained<br>silty sand, with mica flakes<br>and occasional organic layers |                     |                         |                                                                                      | 33    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 20    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 20    |
|                           | 35    |                             |                                                                                                |                     |                         |                                                                                      | 29    |
|                           |       |                             | Gray, fine to medium grained                                                                   |                     | 8                       |                                                                                      | 17    |
|                           |       |                             | With occasional layers of<br>fine gravel                                                       |                     |                         |                                                                                      | 17    |
|                           | 40    |                             |                                                                                                |                     |                         |                                                                                      | 19    |
|                           |       |                             | Fine grained, no gravel                                                                        |                     |                         |                                                                                      | 20    |
|                           |       |                             | Fine to medium grained                                                                         |                     | 9                       |                                                                                      | 14    |
|                           | 45    |                             |                                                                                                |                     |                         |                                                                                      | 11    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 17    |
|                           | 50    |                             | Fine grained                                                                                   |                     |                         |                                                                                      | 40    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 37    |
|                           | 55    |                             | MH - Green plastic silt with<br>fine mica flakes                                               |                     | 10                      |                                                                                      | 23    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 19    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 34    |
|                           | 60    |                             |                                                                                                |                     |                         |                                                                                      | 36    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 34    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 34    |
|                           | 65    |                             |                                                                                                |                     | 11                      |                                                                                      | 40    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 66    |
|                           |       |                             |                                                                                                |                     |                         |                                                                                      | 70    |
|                           |       |                             |                                                                                                |                     | 12                      |                                                                                      | 70    |
|                           |       |                             | Bottom of Hole 67.5'                                                                           |                     |                         |                                                                                      |       |
|                           | 70    |                             |                                                                                                |                     |                         |                                                                                      |       |

Hole No. SH-149

| DRILLING LOG                                                                                                                 |       | DIVISION              | INSTALLATION                                                                                     | SHEET                              |                                      |                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|--------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><u>SAVANNAH HARBOR DEEPENING</u>                                                                               |       | <u>SOUTH ATLANTIC</u> | <u>SAVANNAH, GA.</u>                                                                             | <u>1</u> OF <u>2</u> SHEETS        |                                      |                                                                                                                           |
| 2. LOCATION (Coordinates or Station)<br><u>X = 017840; Y = 778530 (GA EAST)</u>                                              |       |                       | 10. SIZE AND TYPE OF BIT<br><u>1 3/8" I.D. SPLIT SPOON,</u>                                      |                                    |                                      |                                                                                                                           |
| 3. DRILLING AGENCY<br><u>SAVANNAH DISTRICT</u>                                                                               |       |                       | 11. DATUM FOR ELEVATION SHOWN (BSM or MSL)<br><u>MLW</u>                                         |                                    |                                      |                                                                                                                           |
| 4. HOLE NO. (As shown on drawing title and file number)<br><u>SH-149</u>                                                     |       |                       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>FALLING 314</u>                                    |                                    |                                      |                                                                                                                           |
| 5. NAME OF DRILLER<br><u>D. JUSTICE</u>                                                                                      |       |                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                       | <u>DISTURBED</u><br><u>15</u>      | <u>UNDISTURBED</u><br><u>0</u>       |                                                                                                                           |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       | 14. TOTAL NUMBER CORE BOXES<br><u>0</u>                                                          |                                    |                                      |                                                                                                                           |
| 7. THICKNESS OF OVERBURDEN<br><u>60.0'</u>                                                                                   |       |                       | 15. ELEVATION GROUND WATER<br><u>SEE REMARKS</u>                                                 |                                    |                                      |                                                                                                                           |
| 8. DEPTH DRILLED INTO ROCK<br><u>0.0'</u>                                                                                    |       |                       | 16. DATE HOLE                                                                                    | <u>STARTED</u><br><u>18 OCT 91</u> | <u>COMPLETED</u><br><u>18 OCT 91</u> |                                                                                                                           |
| 9. TOTAL DEPTH OF HOLE<br><u>60.0'</u>                                                                                       |       |                       | 17. ELEVATION TOP OF HOLE                                                                        |                                    |                                      |                                                                                                                           |
|                                                                                                                              |       |                       | 18. TOTAL CORE RECOVERY FOR BORING<br><u>N/A</u>                                                 |                                    |                                      |                                                                                                                           |
|                                                                                                                              |       |                       | 19. SIGNATURE OF INSPECTOR<br><u>J. J. [Signature]</u>                                           |                                    |                                      |                                                                                                                           |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                    | BOX OR SAMPLE NO.                    | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                            |
|                                                                                                                              | 0     |                       | (SM) BROWN, SILTY FINE TO MEDIUM SAND, TRACE OF ROOTS, SLIGHTLY DAMP.                            |                                    | 1                                    | CLEANED OUT HOLE WITH 4" SPIRAL AUGER FROM 1.5' TO 4.5' & 6.0' TO 9.0'. JAL SAMPLE #2 TAKEN FROM AUGER FROM 1.5' TO 4.5'. |
|                                                                                                                              | 5     |                       | (SP) LIGHT BROWN TO TAN POORLY GRADED FINE TO MEDIUM SAND, TRACE OF SILT, SLIGHTLY DAMP.         |                                    | 2                                    |                                                                                                                           |
|                                                                                                                              | 10    |                       | (SM) BROWN, SILTY, FINE TO MEDIUM SAND, DAMP. MEDIUM SAND, WET.                                  |                                    | 3                                    | BEGAN USING 5 1/2" FLIGHT & ZFOGEL DRILLING MUD AT 10.5'.                                                                 |
|                                                                                                                              | 15    |                       | MEDIUM TO COARSE SAND, SOME FINE TO MEDIUM SAND FROM 10.3' TO 10.5'.                             |                                    | 4                                    | SPLIT SPOON DRIBBS TAKEN AT 4.5' INTERVALS.                                                                               |
|                                                                                                                              | 20    |                       | WASH                                                                                             |                                    | 5                                    | WATER LEVEL 6.5' DEPTH TO WATER DURING DRILLING.                                                                          |
|                                                                                                                              | 25    |                       | (SC) GREENISH GRAY, CLAYEY, FINE TO MEDIUM SAND, SOME SILT, TRACE OF MICA, WET.                  |                                    | 6                                    | WATER LEVEL NOT ENCOUNTERED 210.0". TAPPED HOLE TO 5.0'.                                                                  |
|                                                                                                                              | 30    |                       | WASH                                                                                             |                                    | 7                                    |                                                                                                                           |
|                                                                                                                              | 35    |                       | (SM) TANNISH GRAY, SILTY, MEDIUM TO COARSE SAND, TRACE OF CLAY, WBT.                             |                                    | 8                                    |                                                                                                                           |
|                                                                                                                              | 40    |                       | WASH                                                                                             |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 45    |                       | (SP) TANNISH GRAY, POORLY GRADED MEDIUM TO COARSE SAND, TRACE OF SILT, WBT.                      |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 50    |                       | WASH                                                                                             |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 55    |                       | SAME AS 22.5' TO 24.0'                                                                           |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 60    |                       | WASH                                                                                             |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 65    |                       | CONTINUED ON SHEET #2                                                                            |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 70    |                       | NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM. |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 75    |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 80    |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 85    |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 90    |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 95    |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 100   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 105   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 110   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 115   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 120   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 125   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 130   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 135   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 140   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 145   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 150   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 155   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 160   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 165   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 170   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 175   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 180   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 185   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 190   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 195   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 200   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 205   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 210   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 215   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 220   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 225   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 230   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 235   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 240   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 245   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 250   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 255   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 260   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 265   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 270   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 275   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 280   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 285   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 290   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 295   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 300   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 305   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 310   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 315   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 320   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 325   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 330   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 335   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 340   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 345   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 350   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 355   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 360   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 365   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 370   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 375   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 380   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 385   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 390   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 395   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 400   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 405   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 410   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 415   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 420   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 425   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 430   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 435   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 440   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 445   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 450   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 455   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 460   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 465   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 470   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 475   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 480   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 485   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 490   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 495   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 500   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 505   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 510   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 515   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 520   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 525   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 530   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 535   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 540   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 545   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 550   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 555   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 560   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 565   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 570   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 575   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 580   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 585   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 590   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 595   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 600   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 605   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 610   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 615   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 620   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 625   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 630   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 635   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 640   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 645   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 650   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 655   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 660   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 665   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 670   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 675   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 680   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 685   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 690   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 695   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 700   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 705   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 710   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 715   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 720   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 725   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 730   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 735   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 740   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 745   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 750   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 755   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 760   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 765   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 770   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 775   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 780   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 785   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 790   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 795   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 800   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 805   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 810   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 815   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 820   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 825   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 830   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 835   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 840   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 845   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 850   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 855   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 860   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 865   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 870   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 875   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 880   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 885   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 890   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 895   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 900   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 905   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 910   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 915   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 920   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 925   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 930   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 935   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 940   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 945   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 950   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 955   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 960   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 965   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 970   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 975   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 980   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 985   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 990   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 995   |                       |                                                                                                  |                                    |                                      |                                                                                                                           |
|                                                                                                                              | 1000  |                       |                                                                                                  |                                    |                                      |                                                                                                                           |

BLOWS PER FOOT:  
NUMBER REQUIRED TO  
DRIVE 1 3/8" I.D. SPLIT-  
SPOON WITH 140LB.  
HAMMER FALLING 70".

| DRILLING LOG (Cont. Sheet)           |       |        | ELEVATION TOP OF HOLE                                                             |                    | Hole No. SH-149                |                                                                                      |
|--------------------------------------|-------|--------|-----------------------------------------------------------------------------------|--------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |       |        | INSTALLATION<br>SAVANNAH, GA.                                                     |                    | SHEET 2<br>OF 2 SHEETS         |                                                                                      |
| ELEVATION                            | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                      | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|                                      | 30    |        | Wash.                                                                             |                    |                                |                                                                                      |
|                                      |       |        | (SM) Grey, fine to med. silty SAND. Trace of mica, wet.                           |                    | 9                              |                                                                                      |
|                                      |       |        | Wash.                                                                             |                    |                                |                                                                                      |
|                                      | 35    |        | (SP) Grey, med. to coarse, poorly graded SAND. Trace of silt & mica, wet.         |                    | 10                             |                                                                                      |
|                                      |       |        | Wash.                                                                             |                    |                                |                                                                                      |
|                                      | 40    |        | Same as 36.0' to 37.5' but coarse sand. Trace of fine gravel.                     |                    | 11                             |                                                                                      |
|                                      |       |        | Wash.                                                                             |                    |                                |                                                                                      |
|                                      | 45    |        | Same as 40.5' to 42.0'.                                                           |                    | 12                             |                                                                                      |
|                                      |       |        | Wash.                                                                             |                    |                                |                                                                                      |
|                                      | 50    |        | (GP) Greenish-grey, fine, poorly graded GRAVEL. Trace of silt & coarse sand, wet. |                    | 13                             |                                                                                      |
|                                      |       |        | Wash.<br>NOTE: Wash return contained some sand and clay.                          |                    |                                |                                                                                      |
|                                      | 55    |        | (CL) Greyish-green, silty, lean CLAY. Trace of mica & fine sand, slightly damp.   |                    | 14                             |                                                                                      |
|                                      |       |        | Wash.                                                                             |                    |                                |                                                                                      |
|                                      |       |        | Same as 54.0' to 55.5' but dry.                                                   |                    | 15                             |                                                                                      |
|                                      | 60    |        | Bottom of Boring 60.0'                                                            |                    |                                |                                                                                      |



Hole No. SM-13U

| DRILLING LOG                                                                                                                 |              | VISION SOUTH ATLANTIC                                                                            |                                                   | INSTALLATION SAVANNAH, GA.                                                   |                                | SHEET 1 OF 2 SHEETS                                                                           |                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                                                                                                  |                                                   | 10. SIZE AND TYPE OF BIT 1 3/4" splitspoon, 4" spiral auger, 5 1/2" fishtail |                                |                                                                                               |                                                                                                                                                                                                         |
| 2. LOCATION (Coordinates or Station)<br>X-817555 Y-779145 GA. EAST                                                           |              |                                                                                                  |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                            |                                |                                                                                               |                                                                                                                                                                                                         |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                                                                                                  |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                       |                                |                                                                                               |                                                                                                                                                                                                         |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-150                                                            |              |                                                                                                  |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 18 : 0 : 0                      |                                |                                                                                               |                                                                                                                                                                                                         |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                                                                                                  |                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                             |                                |                                                                                               |                                                                                                                                                                                                         |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                                                                                                  |                                                   | 15. ELEVATION GROUND WATER SEE REMARKS                                       |                                |                                                                                               |                                                                                                                                                                                                         |
| 7. THICKNESS OF OVERBURDEN 64.5'                                                                                             |              |                                                                                                  |                                                   | 16. DATE HOLE : STARTED : 16 OCT 91 : COMPLETED : 17 OCT 91                  |                                |                                                                                               |                                                                                                                                                                                                         |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                                                                                                  |                                                   | 17. ELEVATION TOP OF HOLE                                                    |                                |                                                                                               |                                                                                                                                                                                                         |
| 9. TOTAL DEPTH OF HOLE 64.5'                                                                                                 |              |                                                                                                  |                                                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                                       |                                |                                                                                               |                                                                                                                                                                                                         |
|                                                                                                                              |              |                                                                                                  |                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                             |                                |                                                                                               |                                                                                                                                                                                                         |
| ELEVATION<br>a                                                                                                               | DEPTH<br>0 b | LEGEND<br>c                                                                                      | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVER-<br>ERY                                                    | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS |                                                                                                                                                                                                         |
|                                                                                                                              |              | (SP) Tan, coarse, poorly graded SAND, damp.                                                      |                                                   |                                                                              | 1                              |                                                                                               | 4                                                                                                                                                                                                       |
|                                                                                                                              |              | (SC) Olive, fine clayey SAND. Some silt, damp.                                                   |                                                   |                                                                              | 2                              |                                                                                               | Cleaned out hole with spiral auger to 4.5'. Jar #2 taken from auger from 1.5' to 4.5'. Splitspoon drive taken at each 4.5' interval to 55.5'. Began using 5 1/2" fishtail & Zeageldrilling mud at 6.0'. |
|                                                                                                                              | 5            | Fine to med sand, trace of fine gravel, wet.                                                     |                                                   |                                                                              | 3                              |                                                                                               | 0                                                                                                                                                                                                       |
|                                                                                                                              |              | Wash.<br>NOTE: Wash return contained large amount of clay.                                       |                                                   |                                                                              |                                |                                                                                               | Water level 2.0' depth to water during drilling.                                                                                                                                                        |
|                                                                                                                              | 10           | Same as 4.5' to 6.0'.                                                                            |                                                   |                                                                              | 4                              |                                                                                               | 15                                                                                                                                                                                                      |
|                                                                                                                              |              | Wash.                                                                                            |                                                   |                                                                              |                                |                                                                                               | Water level 1.7' depth to water on 21 Oct 91. Taped hole to 19.8' depth.                                                                                                                                |
|                                                                                                                              | 15           | (SP) Olive grey, med., poorly graded SAND. Trace of silt, wet.                                   |                                                   |                                                                              | 5                              |                                                                                               | 30                                                                                                                                                                                                      |
|                                                                                                                              |              | Wash.                                                                                            |                                                   |                                                                              |                                |                                                                                               |                                                                                                                                                                                                         |
|                                                                                                                              | 20           | (SM) Olive-grey, med., silty SAND, wet.                                                          |                                                   |                                                                              | 6                              |                                                                                               | 21                                                                                                                                                                                                      |
|                                                                                                                              |              | Wash.<br>Note: Traces of wood in wash.                                                           |                                                   |                                                                              |                                |                                                                                               |                                                                                                                                                                                                         |
|                                                                                                                              | 25           | (SP) Light brown, med. to coarse, poorly graded SAND. Trace of silt, wet.                        |                                                   |                                                                              | 7                              |                                                                                               | 16                                                                                                                                                                                                      |
|                                                                                                                              |              | Wash.                                                                                            |                                                   |                                                                              |                                |                                                                                               |                                                                                                                                                                                                         |
|                                                                                                                              |              | Same as 22.5' to 24.0', but with traces of fine gravel.                                          |                                                   |                                                                              | 8                              |                                                                                               | 26                                                                                                                                                                                                      |
|                                                                                                                              |              | Wash.                                                                                            |                                                   |                                                                              |                                |                                                                                               |                                                                                                                                                                                                         |
|                                                                                                                              | 30           | Continued on sheet #2                                                                            |                                                   |                                                                              |                                |                                                                                               |                                                                                                                                                                                                         |
|                                                                                                                              |              | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                   |                                                                              |                                |                                                                                               | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30".                                                                                                        |

| DRILLING LOG (Cont. Sheet) |       |         | ELEVATION TOP OF HOLE                                                                     |                           | Hole No. SH-150                |                                                                                     |
|----------------------------|-------|---------|-------------------------------------------------------------------------------------------|---------------------------|--------------------------------|-------------------------------------------------------------------------------------|
| PROJECT                    |       |         | INSTALLATION                                                                              |                           | SHEET 2                        |                                                                                     |
| SAVANNAH HARBOR DEEPENING  |       |         | SAVANNAH, GA.                                                                             |                           | OF 2 SHEETS                    |                                                                                     |
| ELEVATION                  | DEPTH | LEGEND  | CLASSIFICATION OF MATERIALS<br>(Description)                                              | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant) |
|                            | 30    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | • •     | (SP) Light brown, fine to med<br>poorly graded SAND. Trace of<br>silt, wet.               |                           | 9                              |                                                                                     |
|                            | 35    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | • • • • | Same as 31.5' to 33.0' but med.<br>to coarse sand.                                        |                           | 10                             |                                                                                     |
|                            | 40    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | • • • • | Same as 36.0' to 37.5' but<br>with some wood.                                             |                           | 11                             |                                                                                     |
|                            | 45    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | • • • • | (SP) Greyish-brown, coarse, poor-<br>ly graded SAND. Trace of fine<br>gravel & silt, wet. |                           | 12                             |                                                                                     |
|                            | 50    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | ▨       | (CL) Greyish-green, silty lean<br>CLAY. Trace of Mica & fine<br>sand, dry.                |                           | 13                             |                                                                                     |
|                            | 55    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | • • • • | Same as 49.5' to 51.0' but<br>greyish-green.                                              |                           | 14                             |                                                                                     |
|                            | 60    |         | Wash.                                                                                     |                           |                                |                                                                                     |
|                            |       | ▨       | (SM) Grey & greenish-grey, fine<br>silty SAND. Trace of Mica, dry.                        |                           | 15                             |                                                                                     |
|                            |       | ▨       | (SC) Greyish-green, fine clayey<br>SAND. Some silt, dry.                                  |                           | 16                             |                                                                                     |
|                            | 65    |         | Bottom of Boring 64.5'                                                                    |                           | 17                             |                                                                                     |
|                            |       |         |                                                                                           |                           | 18                             |                                                                                     |
|                            |       |         |                                                                                           |                           |                                | Began continuous<br>split spoon drives at<br>58.5'.                                 |
|                            |       |         |                                                                                           |                           |                                | 100/0.8                                                                             |
|                            |       |         |                                                                                           |                           |                                | 78                                                                                  |
|                            |       |         |                                                                                           |                           |                                | 42                                                                                  |
|                            |       |         |                                                                                           |                           |                                | 43                                                                                  |

Hole No. SH-15 /

| DRILLING LOG                                                                                                                 |       | VISION SOUTH ATLANTIC |                                                             | INSTALLATION VANNAH, GA.                                  |                   | SHEET 1 OF 1 SHEETS                                                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|-------------------------------------------------------------|-----------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                             | 10. SIZE AND TYPE OF BIT 1 1/4" splitspoon, 5/8" fishtail |                   |                                                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-817067 Y-779191 GA. EAST                                                           |       |                       |                                                             | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                   |                                                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                       |                                                             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314    |                   |                                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-157                                                            |       |                       |                                                             | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                   | DISTURBED<br>5<br>UNDISTURBED<br>0                                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                       |                                                             | 14. TOTAL NUMBER CORE BOXES                               |                   |                                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                             | 15. ELEVATION GROUND WATER N/A                            |                   |                                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 59.6' (Water 38.6')                                                                               |       |                       |                                                             | 16. DATE HOLE                                             |                   | STARTED<br>10 DEC 91<br>COMPLETED<br>10 DEC 91                                                                                         |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                       |                                                             | 17. ELEVATION TOP OF HOLE 0.0'                            |                   |                                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE 59.6'                                                                                                 |       |                       |                                                             | 18. TOTAL CORE RECOVERY FOR BORING N/A %                  |                   |                                                                                                                                        |  |
|                                                                                                                              |       |                       |                                                             | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                   |                                                                                                                                        |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                | % CORE RECOVERY                                           | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                      |  |
| 0.0                                                                                                                          | 0.0   |                       |                                                             |                                                           |                   | BLOWS                                                                                                                                  |  |
|                                                                                                                              |       |                       | Water                                                       |                                                           |                   | Scaler change at 35.0'.<br>Set 6" diameter casing by own weight to 43.0'.                                                              |  |
|                                                                                                                              | 35    |                       | Bottom of Harbor 38.6'                                      |                                                           |                   |                                                                                                                                        |  |
| -38.6'                                                                                                                       | 40    |                       | (SP) Tan, poorly graded, coarse SAND.                       |                                                           | 1                 | Weight of rods drove splitspoon to 40.1'. Had no recovery, redrove to 40.1' then cont'd. drive to 41.6'. Sample 1 from 38.6' to 41.6'. |  |
| -41.6'                                                                                                                       |       |                       | Some fine gravel.                                           |                                                           |                   |                                                                                                                                        |  |
| -44.6'                                                                                                                       | 45    |                       | (CL) Grey, silty, lean CLAY. Some fine sand, trace of mica. |                                                           | 2                 |                                                                                                                                        |  |
|                                                                                                                              | 50    |                       |                                                             |                                                           | 3                 |                                                                                                                                        |  |
|                                                                                                                              | 55    |                       |                                                             |                                                           | 4                 |                                                                                                                                        |  |
| -58.1'                                                                                                                       |       |                       | (SC) Grey, fine clayey SAND. Some silt, trace of mica.      |                                                           | 5                 |                                                                                                                                        |  |
| -59.6'                                                                                                                       | 60    |                       | Bottom of Boring 59.6'                                      |                                                           |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30".                                       |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                       |                                                             |                                                           |                   |                                                                                                                                        |  |

Hole No. SM-100

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                      | INSTALLATION<br>SAVANNAH, GA.                                                                       |                              | SHEET 1<br>OF 1 SHEETS                                                                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                      | 10. SIZE AND TYPE OF BIT<br>1 1/4" spitspoon, 5/16" fishtail                                        |                              |                                                                                                                                             |  |
| 2. LOCATION (Coordinates or Station)<br>X=817368 Y=779194 GA. EAST                                                           |            |                          |                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                   |                              |                                                                                                                                             |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                              |                              |                                                                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-158                                                            |            |                          |                                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 6<br>UNDISTURBED: 0                        |                              |                                                                                                                                             |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                      | 14. TOTAL NUMBER CORE BOXES<br>0                                                                    |                              |                                                                                                                                             |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                      | 15. ELEVATION GROUND WATER<br>N/A                                                                   |                              |                                                                                                                                             |  |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (WATER 34.5')                                                                            |            |                          |                                                                      | 16. DATE HOLE<br>6 DEC 91                                                                           |                              | 18. ELEVATION TOP OF HOLE<br>0.0'                                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                          |                                                                      | 17. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                           |                              | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                                                            |  |
| 9. TOTAL DEPTH OF HOLE<br>60.0'                                                                                              |            |                          |                                                                      |                                                                                                     |                              |                                                                                                                                             |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                    | % CORE<br>RECOVERY<br>JAR                                                                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g                                                    |  |
|                                                                                                                              | 30         |                          | Water                                                                |                                                                                                     |                              | Scale change at 30.0'.<br>Set 6" diameter casing by own<br>weight to 40.3'.                                                                 |  |
| -34.5'                                                                                                                       | 35         |                          | (SP) Tan, fine to medium, poorly graded SAND.<br>Trace of silt.      |                                                                                                     | 1                            | Weight of rods drove spitspoon<br>from 34.5' to 35.8'; cont'd.<br>drive to 36.0' w/ one hammer<br>blow. Pulled tool but had no<br>recovery. |  |
| -37.5'                                                                                                                       |            |                          | Medium to coarse.                                                    |                                                                                                     |                              |                                                                                                                                             |  |
| -39.0'                                                                                                                       | 40         |                          | Greyish-tan, trace of wood particles.                                |                                                                                                     | 2                            | Redrove first drive then cont'd.<br>drive to 37.5'. Jar sample #1 from<br>34.5' to 37.5'. Began using Zeagel<br>drilling mud at 37.5'.      |  |
| -43.5'                                                                                                                       | 45         |                          | (CH) Dark olive-grey, fat CLAY. Trace of<br>silt, fine sand & mica.  |                                                                                                     | 3                            |                                                                                                                                             |  |
| -46.5'                                                                                                                       |            |                          | Some fine sand.                                                      |                                                                                                     |                              |                                                                                                                                             |  |
| -48.0'                                                                                                                       | 50         |                          | (CL) Olive-grey, silty, lean CLAY. Some fine<br>sand, trace of mica. |                                                                                                     | 4                            |                                                                                                                                             |  |
| -49.5'                                                                                                                       |            |                          | Trace of fine sand.                                                  |                                                                                                     |                              |                                                                                                                                             |  |
| -51.0'                                                                                                                       |            |                          | Some fine sand.                                                      |                                                                                                     |                              |                                                                                                                                             |  |
| -52.5'                                                                                                                       | 55         |                          | (CH) olive-grey, fat CLAY. Trace of fine sand<br>& mica.             |                                                                                                     | 5                            |                                                                                                                                             |  |
|                                                                                                                              | 60         |                          | Bottom of Boring 60.0'                                               |                                                                                                     | 6                            |                                                                                                                                             |  |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.                       |            |                          |                                                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D.<br>spitspoon w/ 140 lb. hammer falling 30". |                              |                                                                                                                                             |  |

Hole No. SM-109

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" splitspoon, 5/8" fishtail |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=816934 Y=778722 GA. EAST                                                           |            |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314       |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-159                                                            |            |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4              |                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED<br>0<br>UNDISTURBED<br>0                 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>50.3' (Water 41.3')                                                                            |            |                          |                                                                                                  | 16. DATE HOLE<br>14 JAN 92                                   |                                | 16. DATE HOLE<br>STARTED<br>14 JAN 92<br>COMPLETED<br>14 JAN 92                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>50.3'                                                                                              |            |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                                |                                                                                                  |  |
| 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                                             |            |                          |                                                                                                  |                                                              |                                |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>a              | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE<br>RECOVERY<br>a                                      | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>a        |  |
|                                                                                                                              |            |                          | Water                                                                                            |                                                              |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.3'.                            |  |
| -41.3'                                                                                                                       | 40         |                          | Bottom of Harbor 41.3'                                                                           |                                                              |                                |                                                                                                  |  |
| -42.8'                                                                                                                       |            |                          | (SC) Olive-grey, fine clayey SAND. Trace of mica.                                                |                                                              | 1                              | 5                                                                                                |  |
|                                                                                                                              |            |                          | (SM) Dark grey, fine silty SAND. Trace of clay & mica.                                           |                                                              | 2                              | 33                                                                                               |  |
| -45.8'                                                                                                                       | 45         |                          | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                                                              | 3                              | 62                                                                                               |  |
| -47.3'                                                                                                                       |            |                          | Trace of silt.                                                                                   |                                                              | 4                              | 28                                                                                               |  |
| -50.3'                                                                                                                       | 50         |                          | Bottom of Boring 50.3'                                                                           |                                                              |                                | 39                                                                                               |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                                | 52                                                                                               |  |
|                                                                                                                              |            |                          |                                                                                                  |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |

SH-16U

| DRILLING LOG                                                                                                                   |       | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                               |                   | SHEET 1<br>OF 1 SHEETS                                                                                                                        |  |
|--------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                        |       |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/8" Spitspoon, 5/8" Fishtail |                   |                                                                                                                                               |  |
| 2. LOCATION (Coordinates or Station)<br>X-817039 Y-778184 GA. EAST                                                             |       |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                   |                                                                                                                                               |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                        |       |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FAILING 314      |                   |                                                                                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-160                                                              |       |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>5             |                   | 13. DISTURBED<br>0                                                                                                                            |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                            |       |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                            |                   | 13. UNDISTURBED<br>0                                                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED : _____ DEG. FROM VERT. |       |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                           |                   | 16. DATE HOLE<br>STARTED 14 JAN 91<br>COMPLETED 14 JAN 91                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>50.8' (Water 40.3')                                                                              |       |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                           |                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                             |       |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.            |                   |                                                                                                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>50.8'                                                                                                |       |                          |                                                                                                  |                                                             |                   |                                                                                                                                               |  |
| ELEVATION                                                                                                                      | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY                                             | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                             |  |
| 0.0                                                                                                                            | 0     |                          |                                                                                                  |                                                             |                   | BLOWS                                                                                                                                         |  |
|                                                                                                                                |       |                          | Water                                                                                            |                                                             |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 43.4'.                                                                      |  |
|                                                                                                                                |       |                          | Bottom of Harbor 40.3'                                                                           |                                                             |                   |                                                                                                                                               |  |
| -40.3'                                                                                                                         | 40    |                          | (MH) Dark grey to black clayey SILT.                                                             |                                                             | 1                 | Weight of rods drove spitspoon from 40.3' to 42.6'. Cont'd. drive to 43.3' with three hammer blows. Jar sample 2 from approx. 42.6' to 43.3'. |  |
| -42.6'                                                                                                                         |       |                          | (SC) Dark grey, fine to medium clayey SAND.                                                      |                                                             | 2                 |                                                                                                                                               |  |
| -43.3'                                                                                                                         |       |                          | (SM) Dark grey, fine silty SAND. Trace of clay.                                                  |                                                             | 3                 |                                                                                                                                               |  |
|                                                                                                                                | 45    |                          |                                                                                                  |                                                             |                   |                                                                                                                                               |  |
| -46.3'                                                                                                                         |       |                          | (SC) Grey, fine clayey SAND. Some silt. Trace of mica.                                           |                                                             | 4                 |                                                                                                                                               |  |
|                                                                                                                                | 50    |                          |                                                                                                  |                                                             | 5                 |                                                                                                                                               |  |
| -50.8'                                                                                                                         |       |                          | Bottom of Boring 50.8'                                                                           |                                                             |                   |                                                                                                                                               |  |
|                                                                                                                                |       |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                             |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/8" I.D. spitspoon w/140 lb. hammer falling 30".                                               |  |

Hole No. SH-101

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>VANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" Split spoon, 5/2" Fishtail |                                |                                                                                                          |  |
| 2. LOCATION (Coordinates or Station)<br>X=818085 Y=778090 GA. EAST                                                           |            |                          |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or NSL)<br>MLW          |                                |                                                                                                          |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314     |                                |                                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-161                                                            |            |                          |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                 |                                | 13. DISTURBED : 4<br>UNDISTURBED : 0                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                           |                                |                                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                          |                                |                                                                                                          |  |
| 7. THICKNESS OF OVERBURDEN 50.9' (Water 38.9')                                                                               |            |                          |                                                                                                        | 16. DATE HOLE                                              |                                | 16. STARTED : 14 JAN 91<br>COMPLETED : 14 JAN 91                                                         |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                          |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                             |                                |                                                                                                          |  |
| 9. TOTAL DEPTH OF HOLE 50.9'                                                                                                 |            |                          |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A %                   |                                |                                                                                                          |  |
|                                                                                                                              |            |                          |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.           |                                |                                                                                                          |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOV-<br>ERY                                    | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS            |  |
|                                                                                                                              |            |                          | Water                                                                                                  |                                                            |                                | Scale change at 35.0'.<br>Set 6" diameter casing by own weight<br>to 44.9'.                              |  |
|                                                                                                                              | 35         |                          | Bottom of Harbor 38.9'                                                                                 |                                                            |                                | Weight of rods drove split spoon<br>from 38.9' to 44.9'.<br>Jar sample 2 from approx. 44.0'<br>to 44.9'. |  |
|                                                                                                                              | 40         |                          | (MH) Very dark grey clayey SILT.                                                                       |                                                            | 1                              |                                                                                                          |  |
|                                                                                                                              | 44.0'      |                          | (SC) Dark grey, fine to medium clayey SAND.                                                            |                                                            | 2                              |                                                                                                          |  |
|                                                                                                                              | 44.9'      |                          | Fine sand, some silt, trace of mica.                                                                   |                                                            | 3                              |                                                                                                          |  |
|                                                                                                                              | 50         |                          | Bottom of Boring 50.9'                                                                                 |                                                            | 4                              |                                                                                                          |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                            |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>split spoon w/140 lb. hammer falling 30".     |  |

Hole No. SH-162

| DRILLING LOG                                                                                                                 |       | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                 |                         | SHEET 1<br>OF 1 SHEETS                                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5 1/2" fish tail |                         |                                                                                                          |  |
| 2. LOCATION (Coordinates or Station)<br>X-817143 Y-777680 GA. EAST                                                           |       |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSU)<br>MLW             |                         |                                                                                                          |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314        |                         |                                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-162                                                            |       |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6               |                         | DISTURBED<br>6<br>UNDISTURBED<br>0                                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                              |                         |                                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                          |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                |                         |                                                                                                          |  |
| 7. THICKNESS OF OVERBURDEN 59.9' (Water 41.5')                                                                               |       |                          |                                                                                                  | 16. DATE HOLE<br>STARTED 26 JAN 92                            |                         | COMPLETED 26 JAN 92                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                |                         |                                                                                                          |  |
| 9. TOTAL DEPTH OF HOLE 59.9'                                                                                                 |       |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                        |                         |                                                                                                          |  |
|                                                                                                                              |       |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |                         |                                                                                                          |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOVERY                                            | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                     |  |
| 0.0                                                                                                                          | 0.0   |                          |                                                                                                  |                                                               |                         | BLOWS                                                                                                    |  |
|                                                                                                                              |       |                          | Water                                                                                            |                                                               |                         | Scale change at 41.5'.<br>Set 6" diameter casing by own weight to 43.3'.                                 |  |
|                                                                                                                              | 40    |                          | Bottom of Harbor 41.5'                                                                           |                                                               |                         |                                                                                                          |  |
| -41.5'                                                                                                                       |       |                          | (MH) Very dark gray to black clayey SILT. Some fine to coarse sand.                              |                                                               | 1                       | Weight of rods drove split spoon from 41.5' to 43.4'.<br>Jar sample 2 taken from approx. 43.0' to 43.4'. |  |
| -43.0'                                                                                                                       |       |                          | (SC) Very grey, fine clayey SAND. Some silt.                                                     |                                                               | 2                       | 0                                                                                                        |  |
| -43.4'                                                                                                                       |       |                          | Trace of mica.                                                                                   |                                                               | 3                       | 59                                                                                                       |  |
|                                                                                                                              | 45    |                          | Trace of silt.                                                                                   |                                                               | 4                       | 43                                                                                                       |  |
| -46.4'                                                                                                                       |       |                          |                                                                                                  |                                                               | 5                       | 43                                                                                                       |  |
|                                                                                                                              | 50    |                          |                                                                                                  |                                                               | 6                       | 45                                                                                                       |  |
|                                                                                                                              | 55    |                          |                                                                                                  |                                                               |                         | 42                                                                                                       |  |
|                                                                                                                              | 60    |                          |                                                                                                  |                                                               |                         | 41                                                                                                       |  |
| -59.9'                                                                                                                       |       |                          |                                                                                                  |                                                               |                         | 46                                                                                                       |  |
|                                                                                                                              |       |                          | Bottom of Boring 59.9'                                                                           |                                                               |                         | 45                                                                                                       |  |
|                                                                                                                              |       |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                               |                         | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. split spoon w/140 lb. hammer falling 30".        |  |



Hole No. SM-103

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                               |                                | SHEET 1<br>of 1 SHEETS                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5/16" fishtail |                                |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-817375 Y-777535 GA. EAST                                                           |            |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN IF BM or MSL<br>MLW           |                                |                                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314      |                                |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-163                                                            |            |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6             |                                | 13. DISTURBED<br>0                                                                                |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                            |                                | 15. ELEVATION GROUND WATER<br>N/A                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                  | 16. DATE HOLE<br>16 Nov 91                                  |                                | 16. STARTED<br>16 NOV 91                                                                          |  |
| 7. THICKNESS OF OVERBURDEN 59.8' (Water 41.8')                                                                               |            |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                              |                                | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                            |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.            |                                |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 59.8'                                                                                                 |            |                          |                                                                                                  |                                                             |                                |                                                                                                   |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>a              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f         |  |
|                                                                                                                              |            |                          | Water                                                                                            |                                                             |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 45.8'.                             |  |
|                                                                                                                              | 40         |                          | Bottom of Harbor 41.8'                                                                           |                                                             |                                |                                                                                                   |  |
| -41.8'                                                                                                                       |            |                          | (MH) Dark gray, fat SILT.                                                                        |                                                             | 1                              | Weight of hammer drive split spoon from 41.8' to 44.3'.                                           |  |
| -43.3'                                                                                                                       |            |                          | (SC) Dark gray & grey, med. to coarse clayey SAND.                                               |                                                             | 2                              | Cont'd. drive with five blows to 44.8'.                                                           |  |
| -44.8'                                                                                                                       | 45         |                          | (SM) Grey, fine silty SAND. Some clay in layers up to 0.3' thick, trace of mica.                 |                                                             | 3                              | Material from 41.8' to approx. 43.3' was very soft & wet.                                         |  |
| -46.3'                                                                                                                       |            |                          | (SC) Greenish gray, fine clayey SAND. Some silt, trace of mica.                                  |                                                             | 4                              |                                                                                                   |  |
|                                                                                                                              | 50         |                          |                                                                                                  |                                                             |                                |                                                                                                   |  |
|                                                                                                                              | 55         |                          |                                                                                                  |                                                             | 5                              |                                                                                                   |  |
|                                                                                                                              | 60         |                          |                                                                                                  |                                                             | 6                              |                                                                                                   |  |
| -59.8'                                                                                                                       |            |                          | Bottom of Boring 59.8'                                                                           |                                                             |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                             |                                |                                                                                                   |  |

Hole No. SM-104

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                    | INSTALLATION<br>SAVANNAH, GA.                                                                           |                                | SHEET 1<br>OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                    | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/2" FISHTAIL                                            |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-818481 Y-777661 GA. EAST                                                           |              |                            |                                                                    | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                       |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                    | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Folling 314                                                  |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-164                                                            |              |                            |                                                                    | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                          |                                | DISTURBED<br>6<br>UNDISTURBED<br>0                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                    | 14. TOTAL NUMBER CORE BOXES<br>0                                                                        |                                |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                    | 15. ELEVATION GROUND WATER N/A                                                                          |                                |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>60.5' (Water 38.6')                                                                            |              |                            |                                                                    | 16. DATE HOLE                                                                                           |                                | STARTED<br>16 NOV 91<br>COMPLETED<br>16 NOV 91                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                    | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                       |                                |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                              |              |                            |                                                                    | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                               |                                |                                                                                           |  |
|                                                                                                                              |              |                            |                                                                    | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                        |                                |                                                                                           |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                  | % CORE<br>RECOV-<br>ERY<br>e                                                                            | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              | 35           |                            | Water                                                              |                                                                                                         |                                |                                                                                           |  |
|                                                                                                                              | -38.6'       |                            | Bottom of Harbor 38.6'                                             |                                                                                                         |                                |                                                                                           |  |
|                                                                                                                              | 40           |                            | (MH) Dark grey, clayey SILT. Very wet<br>& soft.                   |                                                                                                         | 1                              | Weight of hammer drove splitspoon<br>from 38.6' to 44.0'. Jar 2 from<br>43.7' to 44.0'. 0 |  |
|                                                                                                                              | -43.7'       |                            |                                                                    |                                                                                                         | 2                              |                                                                                           |  |
|                                                                                                                              | 45           |                            | (SC) Greenish-grey, fine clayey SAND.<br>Some silt, trace of mica. |                                                                                                         | 3                              |                                                                                           |  |
|                                                                                                                              | 50           |                            |                                                                    |                                                                                                         | 4                              |                                                                                           |  |
|                                                                                                                              | 55           |                            |                                                                    |                                                                                                         | 5                              |                                                                                           |  |
|                                                                                                                              | 60           |                            |                                                                    |                                                                                                         | 6                              |                                                                                           |  |
|                                                                                                                              | -60.5'       |                            | Bottom of Boring 60.5'                                             |                                                                                                         |                                |                                                                                           |  |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.                       |              |                            |                                                                    | BLOWS PER FOOT:<br><br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30". |                                |                                                                                           |  |

Hole No. SH-165

| DRILLING LOG                                                                                                                 |       | VISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                 |                   | SHEET 1 OF 1 SHEETS                                                                  |                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5/8" fishtail |                   |                                                                                      |                                                                                                         |
| 2. LOCATION (Coordinates or Station)<br>X-817521 Y-777184 GA. EAST                                                           |       |                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW          |                   |                                                                                      |                                                                                                         |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314     |                   |                                                                                      |                                                                                                         |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-165                                                            |       |                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                 |                   | 13. DISTURBED : 6<br>UNDISTURBED : 0                                                 |                                                                                                         |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                              |                   |                                                                                      |                                                                                                         |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                                                  | 15. ELEVATION GROUND WATER N/A                             |                   |                                                                                      |                                                                                                         |
| 7. THICKNESS OF OVERBURDEN 50.8' (Water 38.8')                                                                               |       |                       |                                                                                                  | 16. DATE HOLE                                              |                   | 16. STARTED : 14 JAN 92<br>COMPLETED : 14 JAN 92                                     |                                                                                                         |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                       |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                             |                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                                               |                                                                                                         |
| 9. TOTAL DEPTH OF HOLE 50.8'                                                                                                 |       |                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.           |                   |                                                                                      |                                                                                                         |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) BLOWS |                                                                                                         |
| 0+0                                                                                                                          | 0     |                       |                                                                                                  |                                                            |                   |                                                                                      |                                                                                                         |
|                                                                                                                              |       |                       | Water                                                                                            |                                                            |                   |                                                                                      | Scale change at 35.0'. Set 6" diameter casing by own weight to 45.1'.                                   |
|                                                                                                                              | 35    |                       | Bottom of Harbor 44.5' ± 0.8'                                                                    |                                                            |                   |                                                                                      |                                                                                                         |
| -38.8'                                                                                                                       | 40    |                       | (MH) Dark olive-grey, clayey SILT.                                                               |                                                            | 1                 |                                                                                      | Weight of rods drove split spoon from 38.8' to 43.3'. Jar sample 2 taken from approx. 42.8' to 43.3'. 0 |
| -42.8'                                                                                                                       |       |                       | (SC) Very dark grey to black, medium to coarse clayey SAND. Some silt.                           |                                                            | 2                 |                                                                                      |                                                                                                         |
| -44.8'                                                                                                                       | 45    |                       | (SM) Grey, fine silty SAND. Trace of clay & mica.                                                |                                                            | 3                 |                                                                                      |                                                                                                         |
| -46.3'                                                                                                                       |       |                       | (SC) Grey, fine clayey SAND. Some silt, trace of mica.                                           |                                                            | 4                 |                                                                                      |                                                                                                         |
|                                                                                                                              |       |                       |                                                                                                  |                                                            | 5                 |                                                                                      |                                                                                                         |
|                                                                                                                              | 50    |                       |                                                                                                  |                                                            | 6                 |                                                                                      |                                                                                                         |
| -50.8'                                                                                                                       |       |                       | Bottom of Boring 50.8'                                                                           |                                                            |                   |                                                                                      | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30".       |
|                                                                                                                              |       |                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                            |                   |                                                                                      |                                                                                                         |

Hole No. SM-100

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                  |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" splitspoon, 5/2" fishtail                   |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=817973 Y=777182 G.A.EAST                                                           |              |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                         |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-166                                                            |              |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 6<br>UNDISTURBED : 0 |                                |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                                 |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>60.8' (Water 41.3')                                                                            |              |                          |                                                                                                  | 16. DATE HOLE<br>STARTED : 14 DEC 91<br>COMPLETED : 14 DEC 91                  |                                |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 60.8'                                                                                                 |              |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                                |                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY                                                             | BOX OR<br>SAMPLE<br>NO.<br>JBR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e        |  |
|                                                                                                                              |              |                          | Water                                                                                            |                                                                                |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 41.8'.                            |  |
|                                                                                                                              | 40           |                          | Bottom of Harbor 41.3'                                                                           |                                                                                |                                |                                                                                                  |  |
| -41.3'                                                                                                                       |              |                          | (SC) Grey, fine clayey SAND. Some silt.                                                          |                                                                                | 1                              | 25                                                                                               |  |
|                                                                                                                              | 45           |                          | Occasional layer of silty fine sand up to 0.2' thick.                                            |                                                                                | 2                              | 37                                                                                               |  |
| -45.8'                                                                                                                       |              |                          | (SM) Grey, fine silty SAND. Trace of mica.                                                       |                                                                                | 3                              | 64                                                                                               |  |
| -47.3'                                                                                                                       |              |                          |                                                                                                  |                                                                                | 4                              | 100/0.9'                                                                                         |  |
| -48.8'                                                                                                                       |              |                          | (SC) Grey, fine clayey SAND. Some silt, trace of mica.                                           |                                                                                | 5                              | 79                                                                                               |  |
|                                                                                                                              | 50           |                          |                                                                                                  |                                                                                | 6                              | 52                                                                                               |  |
|                                                                                                                              | 55           |                          |                                                                                                  |                                                                                |                                | 49                                                                                               |  |
|                                                                                                                              | 60           |                          | Bottom of Boring 60.8'                                                                           |                                                                                |                                | 47                                                                                               |  |
| -60.8'                                                                                                                       |              |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                                | 45                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | 52                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | 66                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | 65                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | 68                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SM-107

| DRILLING LOG                                                                                                                 |            |             | VISION<br>SOUTH ATLANTIC                                                                         |                                  | INSTALLATION<br>VANNAH, GA.                              |                                                                                                 | SHEET 1<br>OF 1 SHEETS                     |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|--------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |             |                                                                                                  |                                  | 10. SIZE AND TYPE OF BIT 1 1/2" spitspoon, 5/2" fishtail |                                                                                                 |                                            |  |
| 2. LOCATION (Coordinates or Station)<br>X=819096 Y=777170 GA. EAST                                                           |            |             |                                                                                                  |                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW        |                                                                                                 |                                            |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |             |                                                                                                  |                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314   |                                                                                                 |                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-167                                                            |            |             |                                                                                                  |                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN               |                                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |             |                                                                                                  |                                  | 14. TOTAL NUMBER CORE BOXES                              |                                                                                                 | 14. TOTAL NUMBER CORE BOXES                |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             |                                                                                                  |                                  | 15. ELEVATION GROUND WATER                               |                                                                                                 | 15. ELEVATION GROUND WATER                 |  |
| 7. THICKNESS OF OVERBURDEN 59.7' (WATER 42.6')                                                                               |            |             |                                                                                                  |                                  | 16. DATE HOLE                                            |                                                                                                 | 16. DATE HOLE                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |             |                                                                                                  |                                  | 17. ELEVATION TOP OF HOLE                                |                                                                                                 | 17. ELEVATION TOP OF HOLE                  |  |
| 9. TOTAL DEPTH OF HOLE 59.7'                                                                                                 |            |             |                                                                                                  |                                  | 18. TOTAL CORE RECOVERY FOR BORING                       |                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING         |  |
|                                                                                                                              |            |             |                                                                                                  |                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.         |                                                                                                 | 19. SIGNATURE OF INSPECTOR                 |  |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0 | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE RECOVERY<br>FALL JAR<br>f | BOX OR SAMPLE NO.<br>i                                   | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g          |                                            |  |
|                                                                                                                              |            |             | Water                                                                                            |                                  |                                                          | Scale change at 40.0'.                                                                          |                                            |  |
|                                                                                                                              |            |             | Bottom of Harbor 42.6'                                                                           |                                  |                                                          | Set 6" diameter casing by own weight to 45.1'.                                                  |                                            |  |
| -42.6'                                                                                                                       | 40         |             |                                                                                                  |                                  |                                                          |                                                                                                 |                                            |  |
| -44.7'                                                                                                                       | 45         |             | (CH) Dark grey, fat CLAY. Some fine sand.                                                        |                                  | 1                                                        | Weight of rods drove spitspoon from 42.6' to 44.7.                                              |                                            |  |
|                                                                                                                              |            |             | (SC) Grey, fine clayey SAND. Some silt.                                                          |                                  | 2                                                        |                                                                                                 |                                            |  |
|                                                                                                                              |            |             |                                                                                                  |                                  | 3                                                        |                                                                                                 |                                            |  |
|                                                                                                                              |            |             |                                                                                                  |                                  | 4                                                        |                                                                                                 |                                            |  |
|                                                                                                                              |            |             |                                                                                                  |                                  | 5                                                        |                                                                                                 |                                            |  |
| -59.7'                                                                                                                       | 60         |             | Bottom of Boring 59.7'                                                                           |                                  |                                                          | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spitspoon w/140 lb. hammer falling 30". |                                            |  |
|                                                                                                                              |            |             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                  |                                                          |                                                                                                 |                                            |  |

Hole No. SM-168

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 3/4" splitspoon, 5/2" fishtail |                                |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X=817468 Y=776786 GA. EAST                                                           |              |                          |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                                |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314        |                                |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-168                                                            |              |                          |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4              |                                | DISTURBED<br>0                                                                                      |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                | UNDISTURBED<br>0                                                                                    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>53.5' (Water 40.7')                                                                            |              |                          |                                                                                                        | 16. DATE HOLE<br>25 JAN 92                                   |                                | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                          |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                                | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                    |  |
| 9. TOTAL DEPTH OF HOLE<br>53.5'                                                                                              |              |                          |                                                                                                        |                                                              |                                |                                                                                                     |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>e              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOVERY                                           | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |  |
|                                                                                                                              |              |                          | Water                                                                                                  |                                                              |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.5'.                               |  |
| -40.7'                                                                                                                       | 40           |                          | Bottom of Harbor 40.7                                                                                  |                                                              |                                |                                                                                                     |  |
|                                                                                                                              |              |                          | (WH) Very dark grey, clayey SILT.<br>Trace of fine to coarse sand.                                     |                                                              | 1                              | 0                                                                                                   |  |
| -43.8'                                                                                                                       |              |                          | (CL) Dark grey, silty, lean CLAY. Some<br>fine sand. Trace of mica.                                    |                                                              | 2                              |                                                                                                     |  |
| -46.0'                                                                                                                       | 45           |                          | (SC) Grey, fine clayey SAND.<br>Trace of silt, some mica.                                              |                                                              | 3                              | 37                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                                        |                                                              | 4                              | 45                                                                                                  |  |
|                                                                                                                              | 50           |                          |                                                                                                        |                                                              |                                | 77                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                                        |                                                              |                                | 70                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                                        |                                                              |                                | 93                                                                                                  |  |
| -53.5'                                                                                                                       | 55           |                          | Bottom of Boring 53.5'                                                                                 |                                                              |                                | 76                                                                                                  |  |
|                                                                                                                              |              |                          | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D.<br>splitspoon w/140 lb. hammer falling 30". |  |
|                                                                                                                              | 60           |                          |                                                                                                        |                                                              |                                |                                                                                                     |  |

Hole No. 37-100A

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                  |                                | SHEET 1<br>OF 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 5/16" fishtail |                                |                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X=817466 Y=776799 GA. EAST                                                           |             |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW              |                                |                                                                                                      |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314         |                                |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-168A                                                           |             |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>2                |                                | 13. DISTURBED<br>0                                                                                   |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                               |                                |                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                              |                                |                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>59.5' (Water 38.3')                                                                            |             |                            |                                                                                                        | 16. DATE HOLE<br>25 JAN 92                                     |                                | 16. STARTED<br>25 JAN 92                                                                             |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                              |                                |                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE<br>59.5'                                                                                              |             |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                      |                                |                                                                                                      |  |
|                                                                                                                              |             |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.               |                                |                                                                                                      |  |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0= | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                      | % CORE<br>RECOVERY<br>e                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>b            |  |
|                                                                                                                              | 35          |                            | Water                                                                                                  |                                                                |                                |                                                                                                      |  |
|                                                                                                                              | 38.3'       |                            | Bottom of Harbor 38.3'                                                                                 |                                                                |                                |                                                                                                      |  |
|                                                                                                                              | 40          |                            | Wash (see remarks)                                                                                     |                                                                |                                | Cleaned out from 38.3'<br>to 53.5' with 5/16" fishtail.                                              |  |
|                                                                                                                              | 45          |                            |                                                                                                        |                                                                |                                |                                                                                                      |  |
|                                                                                                                              | 50          |                            |                                                                                                        |                                                                |                                |                                                                                                      |  |
|                                                                                                                              | 53.5'       |                            |                                                                                                        |                                                                |                                |                                                                                                      |  |
|                                                                                                                              | 55          |                            | (SC) Dark grey, fine clayey SAND. Trace<br>of silt & mica.                                             |                                                                | 1                              | 75                                                                                                   |  |
|                                                                                                                              |             |                            |                                                                                                        |                                                                |                                | 62                                                                                                   |  |
|                                                                                                                              |             |                            |                                                                                                        |                                                                |                                | 75                                                                                                   |  |
|                                                                                                                              |             |                            |                                                                                                        |                                                                | 2                              | 57                                                                                                   |  |
|                                                                                                                              | 59.5'       |                            | Bottom of Boring 59.5'                                                                                 |                                                                |                                |                                                                                                      |  |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>split spoon w/140 lb. hammer falling 30". |  |

Hole No. SH-169

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/2" FISHTAIL |                              |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-818211 Y-776659 GA. EAST                                                           |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                              |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-169                                                            |              |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | DISTURBED<br>5<br>UNDISTURBED<br>0                                                               |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                              |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                              |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>60.3' (Water 40.8')                                                                            |              |                            |                                                                                                  | 16. DATE HOLE                                                |                              | STARTED<br>26 JAN 92<br>COMPLETED<br>26 JAN 92                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |  |
| 9. TOTAL DEPTH OF HOLE<br>60.3'                                                                                              |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g        |  |
|                                                                                                                              |              |                            | Water                                                                                            |                                                              |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 41.7'.<br>BLOWS                   |  |
|                                                                                                                              | 40           |                            | Bottom of Harbor 40.8'                                                                           |                                                              |                              |                                                                                                  |  |
| -40.8'                                                                                                                       |              |                            | (SC) Olive grey, fine clayey SAND. Some silt. Trace of mica.                                     |                                                              | 1                            | 22                                                                                               |  |
| -43.8'                                                                                                                       |              |                            |                                                                                                  |                                                              |                              | 38                                                                                               |  |
|                                                                                                                              | 45           |                            | Grey.                                                                                            |                                                              | 2                            | 41                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 45                                                                                               |  |
| -48.3'                                                                                                                       |              |                            |                                                                                                  |                                                              |                              | 44                                                                                               |  |
|                                                                                                                              | 50           |                            | Trace of silt.                                                                                   |                                                              | 3                            | 42                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 52                                                                                               |  |
|                                                                                                                              | 55           |                            |                                                                                                  |                                                              | 4                            | 54                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 68                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 66                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 78                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 82                                                                                               |  |
| -60.3'                                                                                                                       | 60           |                            | Bottom of Boring 60.3'                                                                           |                                                              | 5                            | 76                                                                                               |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |



Hole No. SH-170

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                             |                                | SHEET 1<br>OF 1 SHEETS                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/4" SPLITSPOON, 5/2" FISHTAIL |                                |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X=818643 Y=776483 GA. EAST                                                           |            |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314    |                                |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-170                                                            |            |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | DISTURBED<br>5<br>UNDISTURBED<br>0                                                                |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                             |                                |                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                            |                                |                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 59.8' (Water 41.8')                                                                               |            |                            |                                                                                                  | 16. DATE HOLE                                             |                                | STARTED<br>17 NOV 91<br>COMPLETED<br>17 NOV 91                                                    |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                            |                                |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 59.8'                                                                                                 |            |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                                |                                                                                                   |  |
|                                                                                                                              |            |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.C.          |                                |                                                                                                   |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                            | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g BLOWS    |  |
|                                                                                                                              | 40         |                            | Water                                                                                            |                                                           |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.6'.                             |  |
| -41.8'                                                                                                                       |            |                            | Bottom of Harbor 41.8'                                                                           |                                                           |                                |                                                                                                   |  |
|                                                                                                                              | 45         |                            | (CL) Greenish-grey, silty lean CLAY. Trace of mica & fine sand.                                  |                                                           | 1                              | 70                                                                                                |  |
| -44.8'                                                                                                                       |            |                            |                                                                                                  |                                                           | 2                              | 27                                                                                                |  |
|                                                                                                                              | 50         |                            | (SC) Greenish-grey, fine clayey SAND. Some silt, trace of mica.                                  |                                                           | 3                              | 42                                                                                                |  |
|                                                                                                                              | 55         |                            |                                                                                                  |                                                           | 4                              | 36                                                                                                |  |
|                                                                                                                              | 60         |                            |                                                                                                  |                                                           | 5                              | 30                                                                                                |  |
| -59.8'                                                                                                                       |            |                            | Bottom of Boring 59.8'                                                                           |                                                           |                                | 52                                                                                                |  |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                                | 42                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                           |                                | 65                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                           |                                | 60                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                           |                                | 63                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                           |                                | 80                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                           |                                | 64                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                           |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |  |

MOB NO. 377-171

| DRILLING LOG                                                                                                                 |       | VISION<br>SOUTH ATLANTIC |                                              | INSTALLATION<br>SAVANNAH, GA.                                                                     |                   | SHEET 1<br>OF 1 SHEETS                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                          |                                              | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 5/8" fish tail                                    |                   |                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-817736 Y-776361 GA. EAST                                                           |       |                          |                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                   |                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                          |                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                            |                   |                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-171                                                            |       |                          |                                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6                                                   |                   | 13. DISTURBED<br>0                                                                |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                          |                                              | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                   | 15. ELEVATION GROUND WATER<br>N/A                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                          |                                              | 16. DATE HOLE<br>14 DEC 91                                                                        |                   | 16. COMPLETED<br>14 DEC 91                                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>60.5' (WATER 39.5')                                                                            |       |                          |                                              | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                         |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                          |                                              | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                   |                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                              |       |                          |                                              |                                                                                                   |                   |                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE RECOVERY<br>NO. JAR                                                                        | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 0.0                                                                                                                          | 0     |                          |                                              |                                                                                                   |                   | BLOWS                                                                             |  |
|                                                                                                                              | 35    |                          | Water                                        |                                                                                                   |                   | Scale change at 35.0',<br>Set 6" diameter casing by own weight to 45.7'.          |  |
|                                                                                                                              | 40    |                          | Bottom of Harbor 39.5'                       |                                                                                                   |                   |                                                                                   |  |
|                                                                                                                              | 40    |                          | (MH) Dark grey, clayey SILT.                 |                                                                                                   | 1                 | Weight of rods drove split spoon from 39.5' to 45.5'.                             |  |
|                                                                                                                              | 44.5' |                          | (SC) Dark grey, fine to medium clayey SAND.  |                                                                                                   | 2                 |                                                                                   |  |
|                                                                                                                              | 45.5' |                          | (CH) Gray, fat CLAY. Some silt & fine sand.  |                                                                                                   | 3                 |                                                                                   |  |
|                                                                                                                              | 48.5' |                          | (SC) Gray, fine clayey SAND.                 |                                                                                                   | 4                 |                                                                                   |  |
|                                                                                                                              | 50    |                          |                                              |                                                                                                   |                   |                                                                                   |  |
|                                                                                                                              | 55    |                          |                                              |                                                                                                   | 5                 |                                                                                   |  |
|                                                                                                                              | 60    |                          |                                              |                                                                                                   | 6                 |                                                                                   |  |
|                                                                                                                              | 60.5' |                          | Bottom of Boring 60.5'                       |                                                                                                   |                   |                                                                                   |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                          |                                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |                   |                                                                                   |  |

Hole No. SH-172

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                |                          | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISH TAIL                |                          |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=818054 Y=775978 GA. EAST                                                           |              |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                            |                          |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                       |                          |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-172                                                            |              |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 4<br>UNDISTURBED: 0 |                          |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                             |                          |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                            |                          |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>59.9' (Water 43.4')                                                                            |              |                          |                                                                                                  | 16. DATE HOLE<br>STARTED: 25 JAN 92<br>COMPLETED: 25 JAN 92                  |                          |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                            |                          |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>59.9'                                                                                              |              |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                    |                          |                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.C.                             |                          |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE RECOVERY<br>e                                                         | BOX OR SAMPLE NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>f           |  |
|                                                                                                                              |              |                          | Water                                                                                            |                                                                              |                          | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.3'.                            |  |
|                                                                                                                              | 40           |                          | Bottom of Harbor 43.4'                                                                           |                                                                              |                          | 0                                                                                                |  |
| -43.4'                                                                                                                       | 45           |                          | (CL) Dark grey, silty lean CLAY. Some fine sand.                                                 |                                                                              | 1                        | 27                                                                                               |  |
|                                                                                                                              |              |                          | D&M                                                                                              |                                                                              |                          | 99                                                                                               |  |
| -47.9'                                                                                                                       | 50           |                          | (SC) Olive-grey, fine clayey SAND. Some silt, trace of mica.                                     |                                                                              | 2                        | 32                                                                                               |  |
|                                                                                                                              |              |                          | Olive-grey                                                                                       |                                                                              |                          | 31                                                                                               |  |
|                                                                                                                              | 55           |                          |                                                                                                  |                                                                              | 3                        | 90                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                              |                          | 89                                                                                               |  |
|                                                                                                                              | 60           |                          |                                                                                                  |                                                                              | 4                        | 100/0.6                                                                                          |  |
| -59.9'                                                                                                                       |              |                          |                                                                                                  |                                                                              |                          | 100/0.9                                                                                          |  |
|                                                                                                                              |              |                          | Bottom of Boring 59.9'                                                                           |                                                                              |                          | 90                                                                                               |  |
|                                                                                                                              |              |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                              |                          | 54                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                              |                          | 39                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                              |                          | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SM-173

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLITSPOON, 5/8" FISHTAIL |                                |                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-818264 Y-775913 GA. EAST                                                           |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                                |                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314       |                                |                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-173                                                            |              |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>5              |                                | DISTURBED<br>UNDISTURBED<br>0                                                                          |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                |                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>59.8' (Water 44.4')                                                                            |              |                            |                                                                                                  | 16. DATE HOLE<br>27 JAN 92                                   |                                | STARTED<br>COMPLETED<br>27 JAN 92                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                                |                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE<br>59.8'                                                                                              |              |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                                |                                                                                                        |  |
|                                                                                                                              |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                                |                                                                                                        |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>a                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                      | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g              |  |
|                                                                                                                              |              |                            | Water                                                                                            |                                                              |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 48.2'.                                  |  |
|                                                                                                                              | 40           |                            |                                                                                                  |                                                              |                                |                                                                                                        |  |
|                                                                                                                              | 44.4'        |                            | Bottom of Harbor 44.4'                                                                           |                                                              |                                |                                                                                                        |  |
|                                                                                                                              | 45           |                            | (MH) Very dark grey to black clayey SILT.                                                        |                                                              | 1                              | Weight of rods drove splitspoon from 44.4' to 47.9'. Jar sample 2 taken from approx. 47.5' to 47.9'. 0 |  |
|                                                                                                                              | 47.5'        |                            |                                                                                                  |                                                              | 2                              |                                                                                                        |  |
|                                                                                                                              |              |                            | (SC) Dark grey, fine clayey SAND. Trace of silt.                                                 |                                                              | 3                              |                                                                                                        |  |
|                                                                                                                              | 50           |                            |                                                                                                  |                                                              |                                |                                                                                                        |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              | 4                              |                                                                                                        |  |
|                                                                                                                              | 55           |                            |                                                                                                  |                                                              |                                |                                                                                                        |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              | 5                              |                                                                                                        |  |
|                                                                                                                              | 59.8'        |                            | Bottom of Boring 59.8'                                                                           |                                                              |                                | 100/0.9                                                                                                |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30".       |  |

HOLE NO. 37-174

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                           |                              | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISHTAIL            |                              |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-818856 Y-775859 GA. EAST                                                           |            |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                       |                              |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                  |                              |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and title number)<br>SH-174                                                           |            |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 6 UNDISTURBED 0 |                              |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                        |                              |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                          |                              |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 59.6' (Water 41.6')                                                                               |            |                            |                                                                                                  | 16. DATE HOLE<br>STARTED 27 JAN 92 COMPLETED 27 JAN 92                  |                              |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                          |                              |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.6'                                                                                                 |            |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                                  |                              |                                                                                                  |  |
|                                                                                                                              |            |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                        |                              |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                                          | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g        |  |
|                                                                                                                              |            |                            | Water                                                                                            |                                                                         |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 41.9'.                            |  |
|                                                                                                                              | 40         |                            | Bottom of Harbor 41.6'                                                                           |                                                                         |                              |                                                                                                  |  |
| -41.6'                                                                                                                       |            |                            | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                                                                         | 1                            | 30                                                                                               |  |
| -43.1'                                                                                                                       |            |                            | (SM) Dark grey, fine silty SAND. Some clay & mica.                                               |                                                                         | 2                            | 76                                                                                               |  |
| -46.1'                                                                                                                       | 45         |                            | (SC) Grey, fine clayey SAND. Trace of silt.                                                      |                                                                         | 3                            | 49                                                                                               |  |
| -49.1'                                                                                                                       |            |                            | Dark grey.                                                                                       |                                                                         | 4                            | 34                                                                                               |  |
|                                                                                                                              | 50         |                            |                                                                                                  |                                                                         |                              | 38                                                                                               |  |
|                                                                                                                              | 55         |                            |                                                                                                  |                                                                         | 5                            | 44                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                         |                              | 55                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                         | 6                            | 61                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                         |                              | 64                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                         |                              | 58                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                         |                              | 92                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                         |                              | 80                                                                                               |  |
| -59.6'                                                                                                                       | 60         |                            | Bottom of Boring 59.6'                                                                           |                                                                         |                              |                                                                                                  |  |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                         |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |  |

MOIS NO. 37-17J

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                               | SHEET 1<br>OF 1 SHEETS                                                                            |    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------|----|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLITSPOON, 5/2" FISHTAIL |                               |                                                                                                   |    |  |
| 2. LOCATION (Coordinates or Station)<br>X-818516 Y-775447 GA. EAST                                                           |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                               |                                                                                                   |    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                               |                                                                                                   |    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-175                                                            |              |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                               | DISTURBED<br>5<br>UNDISTURBED<br>0                                                                |    |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                               | 15. ELEVATION GROUND WATER<br>N/A                                                                 |    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 16. DATE HOLE<br>17 NOV 91                                   |                               | STARTED<br>17 NOV 91<br>COMPLETED<br>17 NOV 91                                                    |    |  |
| 7. THICKNESS OF OVERBURDEN<br>60.1' (Water 43.6')                                                                            |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                               | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                         |    |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                               |                                                                                                   |    |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |              |                            |                                                                                                  |                                                              |                               |                                                                                                   |    |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE RECOVERY<br>e                                         | BOX OR SAMPLE NO.<br>f<br>UAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g<br>BLOWS   |    |  |
|                                                                                                                              | 40           |                            | Water                                                                                            |                                                              |                               | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 44.1'.                          |    |  |
| -43.6'                                                                                                                       |              |                            | Bottom of Harbor 43.6'                                                                           |                                                              |                               |                                                                                                   |    |  |
| -45.1'                                                                                                                       | 45           |                            | (SC) Greenish-grey, fine clayey SAND. Some silt, trace of mica.                                  |                                                              | 1                             | 24                                                                                                |    |  |
| -46.6'                                                                                                                       |              |                            | Light olive to greenish-grey.                                                                    |                                                              |                               | 37                                                                                                |    |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              | 2                             | 42                                                                                                |    |  |
|                                                                                                                              | 50           |                            |                                                                                                  | Greenish-grey.                                               |                               | 3                                                                                                 | 42 |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                               |                                                                                                   | 49 |  |
|                                                                                                                              | 55           |                            |                                                                                                  |                                                              |                               | 74                                                                                                |    |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                               | 50                                                                                                |    |  |
|                                                                                                                              | 60           |                            |                                                                                                  |                                                              | 4                             | 57                                                                                                |    |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                               | 77                                                                                                |    |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              | 5                             | 77                                                                                                |    |  |
| -60.1'                                                                                                                       | 60           |                            |                                                                                                  |                                                              |                               | 90                                                                                                |    |  |
|                                                                                                                              |              |                            | Bottom of Boring 60.1'                                                                           |                                                              |                               | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30". |    |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                               |                                                                                                   |    |  |

Hole No. SM-04

| DRILLING LOG                                                                                                                 |       | DIVISION       | INSTALLATION                                                                                                    |                 | SHEET 1 OF 2 SHEETS |                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------------------------------|-----------------|---------------------|---------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       | South Atlantic | Savannah, GA                                                                                                    |                 |                     |                                                                                             |
| 2. LOCATION (Coordinates or Station)<br>Y-819190, Y-775340                                                                   |       |                | 10. SIZE AND TYPE OF BIT 3/8" ID splitspoon &                                                                   |                 |                     |                                                                                             |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 4X54                                                                 |                 |                     |                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-84                                                             |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                                          |                 |                     |                                                                                             |
| 5. NAME OF DRILLER<br>T.W. Scott, E. Mauldin                                                                                 |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                      |                 | DISTURBED<br>11     | UNDISTURBED<br>0                                                                            |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. TOTAL NUMBER CORE BOXES                                                                                     |                 |                     |                                                                                             |
| 7. THICKNESS OF OVERBURDEN 50.1'                                                                                             |       |                | 15. ELEVATION GROUND WATER 0.0 MLW                                                                              |                 |                     |                                                                                             |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                | 16. DATE HOLE STARTED 12 Sep 83 COMPLETED 12 Sep 83                                                             |                 |                     |                                                                                             |
| 9. TOTAL DEPTH OF HOLE 50.1'                                                                                                 |       |                | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                                               |                 |                     |                                                                                             |
|                                                                                                                              |       |                | 18. TOTAL CORE RECOVERY FOR BORING %                                                                            |                 |                     |                                                                                             |
|                                                                                                                              |       |                | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen Geologist                                                          |                 |                     |                                                                                             |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                       | % CORE RECOVERY | BOX OR SAMPLE NO.   | REMARKS (Drilling time, water loss, depth of weathering, etc., if sign (yard) Blows         |
| 0.0                                                                                                                          | 0     |                | Sea Water 0.0'-26.9'                                                                                            |                 | JAR                 |                                                                                             |
|                                                                                                                              | 10    |                |                                                                                                                 |                 |                     | Note: Change of scale @ 20.0'                                                               |
|                                                                                                                              | 20    |                |                                                                                                                 |                 |                     |                                                                                             |
|                                                                                                                              | 25    |                |                                                                                                                 |                 |                     | SAMPLE LAD                                                                                  |
|                                                                                                                              |       |                |                                                                                                                 |                 |                     | No. Class LL PL PI                                                                          |
|                                                                                                                              |       |                |                                                                                                                 |                 |                     | 2 SP NP NP NP                                                                               |
|                                                                                                                              |       |                |                                                                                                                 |                 |                     | 3 SP NP NP NP                                                                               |
|                                                                                                                              |       |                |                                                                                                                 |                 |                     | 7 MH 74 35 39                                                                               |
|                                                                                                                              |       |                |                                                                                                                 |                 |                     | 10 CH 113 39 74                                                                             |
| -26.9                                                                                                                        |       |                | Bottom of Harbor 26.9'                                                                                          |                 |                     |                                                                                             |
|                                                                                                                              | 30    |                | SM-Gray silty coarse, medium sand low silt content                                                              |                 | 1                   | Note: Weight of tool 26.9-27.5'                                                             |
|                                                                                                                              |       |                | Gray, black with traces of fine gravel and clay                                                                 |                 | 2                   | Set 6" diameter steel casing to 29.2'.                                                      |
|                                                                                                                              | 35    |                | Gray silty coarse medium sand, low silt content                                                                 |                 | 3                   |                                                                                             |
|                                                                                                                              |       |                |                                                                                                                 |                 | 4                   |                                                                                             |
|                                                                                                                              |       |                |                                                                                                                 |                 |                     |                                                                                             |
|                                                                                                                              |       |                |                                                                                                                 |                 | 5                   |                                                                                             |
| -38.0                                                                                                                        |       |                | ML-Dark green clayey silt with 15% fine sand                                                                    |                 | 6                   |                                                                                             |
|                                                                                                                              | 40    |                |                                                                                                                 |                 | 7                   | Note: Change of scale at 40.0'                                                              |
|                                                                                                                              |       |                |                                                                                                                 |                 | 8                   |                                                                                             |
| -42.0                                                                                                                        |       |                | Continued on Sheet 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                 |                     | Blows Per Foot: Number required to drive 1 3/8" 1D splitspoon w/140 lb. hammer falling 30". |

| DRILLING LOG (Cont Sheet)           |       |        | ELEVATION TOP OF HOLE                                                                                  |                          | Hole No. SH-84                 |                                                                                           |
|-------------------------------------|-------|--------|--------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       |        | INSTALLATION<br>Savannah, GA                                                                           |                          | SHEET 2<br>OF 2 SHEETS         |                                                                                           |
| ELEVATION                           | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | % CORE<br>RECOVER<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) BLOW |
| -42.0                               | 42.0  | c      | d                                                                                                      | e                        | 8                              | Began Coring at 42.5'                                                                     |
| -42.5                               |       |        | ML-Dark green clayey silt,<br>with 15% fine sand.                                                      |                          |                                |                                                                                           |
|                                     |       |        | Core Loss-42.5'-45.6' -<br>believed to be clayey silt,<br>easily washed out, rapid<br>bit penetration. | 0<br>RQD                 |                                | Pull 1<br>From 42.5' To 45.6'<br>Run 3.1' Rec 0.0'<br>CL 3.1'                             |
|                                     |       |        |                                                                                                        | 0                        |                                | All core washed out.                                                                      |
|                                     |       |        |                                                                                                        |                          |                                | Note: Change of scale<br>at 45.0'                                                         |
| -45.6                               | 45    |        | ML-Dark green clayey silt,<br>with 15% fine sand                                                       | 45.6'                    | 9                              | Note: Resume split-                                                                       |
|                                     |       |        |                                                                                                        |                          | 10                             | spooning at 45.6'                                                                         |
| -50.1                               | 50    |        |                                                                                                        |                          | 11                             |                                                                                           |
|                                     |       |        | Bottom of Hole: 50.1'                                                                                  |                          |                                | Note: Depth figure in<br>column 'e' is a taped<br>depth after Pull.                       |



Hole No. SH-83

| DRILLING LOG                                                                                                                  |  | DIVISION       | INSTALLATION                                           |  | SHEET 1 OF 1 SHEETS                                    |                  |
|-------------------------------------------------------------------------------------------------------------------------------|--|----------------|--------------------------------------------------------|--|--------------------------------------------------------|------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                        |  | South Atlantic | Savannah, GA                                           |  |                                                        |                  |
| 2. LOCATION (Coordinates of Station)<br>X-820005, Y-773530                                                                    |  |                | 10. SIZE AND TYPE OF BIT<br>1-3/8" ID splitspoon, 5"   |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>fishtail |                  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                       |  |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314 |  |                                                        |                  |
| 4. HOLE NO. (As shown on logging title and file number)<br>SH-83                                                              |  |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN             |  | DISTURBED<br>8                                         | UNDISTURBED<br>0 |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                              |  |                | 14. TOTAL NUMBER CORE BOXES                            |  |                                                        |                  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                | 15. ELEVATION GROUND WATER                             |  |                                                        |                  |
| 7. THICKNESS OF OVERBURDEN<br>45.8'                                                                                           |  |                | 16. DATE HOLE<br>STARTED 10 Sep 83 COMPLETED 11 Sep 83 |  |                                                        |                  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                            |  |                | 17. ELEVATION TOP OF HOLE<br>0.0'                      |  |                                                        |                  |
| 9. TOTAL DEPTH OF HOLE<br>45.8'                                                                                               |  |                | 18. TOTAL CORE RECOVERY FOR BORING                     |  |                                                        |                  |
|                                                                                                                               |  |                | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist  |  |                                                        |                  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                 | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant)                                            |
|-----------|-------|--------|---------------------------------------------------------------------------|-----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| 0.0       | 0     |        | Sea Water 0.0'-17.3'                                                      |                 |                   | Blows                                                                                                                      |
| -17.3     | 17    |        | Bottom of Harbor: 17.3'                                                   |                 |                   | Note change of scale at 17.0'                                                                                              |
| -20.3     | 22    |        | SP-Gray medium to coarse poorly graded sand with trace of fine gravel     |                 | 1                 | Note: Set 6" casing to 17.3'.<br>Weight of rods with hammer drove splitspoon from 17.3' to 18.3'. Continued drive to 18.8' |
| -23.3     | 27    |        | Tannish gray with trace of silt                                           |                 | 2                 | Reset casing to 24.2', 34.0' 35.8' and 36.8'.                                                                              |
| -24.8     | 32    |        | SM-Tannish gray fine to medium silty sand with layer of gray plastic silt |                 | 3                 |                                                                                                                            |
| -27.8     | 37    |        | SP-Tannish gray fine to medium poorly graded sand with trace of silt      |                 | 4                 |                                                                                                                            |
| -30.8     | 42    |        | Gray, fine grained, trace of mica                                         |                 |                   | SATTLE LAB                                                                                                                 |
| -33.8     | 47    |        | Tannish gray, fine to medium grained.                                     |                 | 5                 | No. Class LL PL PI                                                                                                         |
| -35.3     | 52    |        | Medium to coarse grained with 15% fine gravel                             |                 |                   | 1 SP NP NP NP 27                                                                                                           |
| -37.8     | 57    |        | Fine to medium grained with trace of fine gravel.                         |                 |                   | 2 SC H 55 21 34                                                                                                            |
| -39.8     | 62    |        |                                                                           |                 |                   | 4 ST NP NP NP 56                                                                                                           |
| -42.8     | 67    |        | CL-Green micaceous lean clay.                                             |                 | 7                 | 7 CH 105 34 71 30                                                                                                          |
| -44.8     | 72    |        |                                                                           |                 |                   | 32.3' Ten blows required to drive splitspoon from 33.7' to 33.8'                                                           |
| -45.8     | 77    |        | With 20% fine sand                                                        |                 | 8                 | 39.8' Casing stopped following wash with fishtail                                                                          |
|           |       |        | Bottom of Hole: 45.8'                                                     |                 |                   | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".                                |

| DRILLING LOG                                                                                                                  |            | DIVISION<br>South Atlantic |                                                                                                                 | INSTALLATION<br>Savannah, GA                                                 |                              | Hole No. SH-85<br>SHEET 1<br>OF 2 SHEETS                                                    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------|----|----|----|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                        |            |                            |                                                                                                                 | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                |                              |                                                                                             |    |    |    |
| 2. LOCATION (Coordinates or Station)<br>X-821038, Y-771926                                                                    |            |                            |                                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                            |                              |                                                                                             |    |    |    |
| 3. DRILLING AGENCY<br>Savannah District                                                                                       |            |                            |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                       |                              |                                                                                             |    |    |    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-85                                                              |            |                            |                                                                                                                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                    |                              | DISTURBED<br>12                                                                             |    |    |    |
|                                                                                                                               |            |                            |                                                                                                                 |                                                                              |                              | UNDISTURBED<br>0                                                                            |    |    |    |
| 5. NAME OF DRILLER<br>T. W. Scott and Earl Maulden                                                                            |            |                            |                                                                                                                 | 14. TOTAL NUMBER CORE BOXES                                                  |                              |                                                                                             |    |    |    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                                 | 15. ELEVATION GROUND WATER<br>0.0 MLW                                        |                              |                                                                                             |    |    |    |
| 7. THICKNESS OF OVERBURDEN<br>50.0'                                                                                           |            |                            |                                                                                                                 | 16. DATE HOLE<br>13 Sep 83                                                   |                              |                                                                                             |    |    |    |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                            |            |                            |                                                                                                                 | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                         |                              |                                                                                             |    |    |    |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                               |            |                            |                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING<br>3                                      |                              |                                                                                             |    |    |    |
|                                                                                                                               |            |                            |                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen Geologist <i>James E. Bolen</i> |                              |                                                                                             |    |    |    |
| ELEVATION<br>0.0                                                                                                              | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                               | 1 CORE<br>RECOVERY<br>e                                                      | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g      |    |    |    |
|                                                                                                                               | 10         |                            | Sea Water 0.0'-21.5'                                                                                            |                                                                              |                              | Note: Change of scale at 20.0'                                                              |    |    |    |
| -21.5                                                                                                                         | 20         |                            | Bottom of Harbor: 21.5'                                                                                         |                                                                              |                              |                                                                                             |    |    |    |
| -23.0                                                                                                                         | 25         |                            | Wood chips, fibers (old piling ?)                                                                               |                                                                              | 1                            |                                                                                             |    |    |    |
|                                                                                                                               | 25         |                            | SM-Gray, brown silty coarse, medium sand (low silt content)                                                     |                                                                              | 2                            | SAMPLE LAB                                                                                  |    |    |    |
|                                                                                                                               | 30         |                            | Gray silty medium grained sand, with a trace of coarse sand                                                     |                                                                              | 3                            | No. Class                                                                                   | LL | PL | PI |
|                                                                                                                               | 35         |                            |                                                                                                                 |                                                                              | 4                            | 2                                                                                           | SP | NP | NP |
|                                                                                                                               | 40         |                            |                                                                                                                 |                                                                              | 5                            | 6                                                                                           | SP | NP | NP |
|                                                                                                                               | 45         |                            |                                                                                                                 |                                                                              | 6                            | 7                                                                                           | CH | 99 | 31 |
|                                                                                                                               |            |                            |                                                                                                                 |                                                                              | 7                            | 10                                                                                          | CH | 97 | 34 |
|                                                                                                                               |            |                            |                                                                                                                 |                                                                              | 8                            |                                                                                             |    |    |    |
|                                                                                                                               |            |                            |                                                                                                                 |                                                                              | 9                            |                                                                                             |    |    |    |
| -39.5                                                                                                                         | 40         |                            | ML-Dark green clayey silt with 10% fine sand                                                                    |                                                                              |                              |                                                                                             |    |    |    |
| -45.0                                                                                                                         | 45         |                            | Continued on Sheet 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                              |                              | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |    |    |    |

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE 0.0' MLW |                                                 | Hole No. SH-85               |                                |                                                                                           |            |
|-------------------------------------|-------|--------------------------------|-------------------------------------------------|------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|------------|
| PROJECT<br>Savannah Harbor Widening |       |                                | INSTALLATION<br>Savannah, GA                    |                              | SHEET 2<br>OF 2 SHEETS         |                                                                                           |            |
| ELEVATION                           | DEPTH | LEGEND                         | CLASSIFICATION OF MATERIALS<br>(Description)    | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g | Blow:<br>h |
| -49.0                               | 45 b  | c                              | d                                               |                              | 9                              |                                                                                           | 5          |
|                                     |       |                                | ML-Dark green clayey silt<br>with 10% fine sand |                              | 10                             |                                                                                           | 6          |
|                                     |       |                                | With 15% fine sand                              |                              | 11                             |                                                                                           | 5          |
|                                     |       |                                |                                                 |                              | 12                             |                                                                                           | 6          |
| -50.0                               | 50    |                                | Bottom of Hole: 50.0'                           |                              |                                |                                                                                           |            |

46

Hole No. SH-87

| DRILLING LOG                                                                                                                 |       | DIVISION       | INSTALLATION                                                                            | SHEET           |                       |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------|-----------------|-----------------------|-----------------------------------------------------------------------------------------------------|
|                                                                                                                              |       | South Atlantic | Savannah, GA                                                                            | OF 2 SHEETS     |                       |                                                                                                     |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                | 10. SIZE AND TYPE OF BIT 3/8" ID splitspoon                                             |                 |                       |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>X-826323, Y-765959                                                                   |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MSL                                       |                 |                       |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                  |                 |                       |                                                                                                     |
| 4. HOLE NO. (As shown on map or title and file number)<br>SH-87                                                              |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 9 UNDISTURBED 0                 |                 |                       |                                                                                                     |
| 5. NAME OF DRILLER<br>E. Maulden & T. Scott                                                                                  |       |                | 14. TOTAL NUMBER CORE BOXES                                                             |                 |                       |                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 15. ELEVATION GROUND WATER 0.0' MLW                                                     |                 |                       |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN 50.0'                                                                                             |       |                | 16. DATE HOLE STARTED 14 Sep 83 COMPLETED 15 Sep 83                                     |                 |                       |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                | 17. ELEVATION TOP OF HOLE 0.0' MLW                                                      |                 |                       |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE 50.0'                                                                                                 |       |                | 18. TOTAL CORE RECOVERY FOR BORING 1                                                    |                 |                       |                                                                                                     |
|                                                                                                                              |       |                | 19. SIGNATURE OF INSPECTOR<br>James E. Rolan, Geologist <i>James E. Rolan</i>           |                 |                       |                                                                                                     |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY | BOX OR SAMPLE NO. JAR | REMARKS (Drilling time, water loss, depth of weathering, etc.; if significant)                      |
| 0.0'                                                                                                                         | 0     |                |                                                                                         |                 |                       | Blows                                                                                               |
|                                                                                                                              | 10    |                | Sea Water 0.0'-19.6'                                                                    |                 |                       | Note: Change of scale at 10.0'                                                                      |
|                                                                                                                              | 15    |                |                                                                                         |                 |                       | SAMPLE LAB                                                                                          |
|                                                                                                                              |       |                |                                                                                         |                 |                       | No. Class LL PL PI                                                                                  |
|                                                                                                                              |       |                |                                                                                         |                 |                       | 3 SP NP NP NP                                                                                       |
|                                                                                                                              |       |                |                                                                                         |                 |                       | 7 SP NP NP NP                                                                                       |
|                                                                                                                              |       |                |                                                                                         |                 |                       | 9 SC-H 65 26 39                                                                                     |
|                                                                                                                              | 20    |                | Bottom of Harbor 19.6'                                                                  |                 |                       |                                                                                                     |
|                                                                                                                              | 25    |                | SM-Gray, brown silty coarse medium sand with 5% rounded fine gravel, subangular grains  |                 | 1                     | Note: Weight of hammer 19.6'-20.5'                                                                  |
|                                                                                                                              | 30    |                | No Sample                                                                               |                 | 2                     |                                                                                                     |
|                                                                                                                              | 35    |                | SM-Gray, brown silty coarse medium sand with 5% rounded fine gravel                     |                 | 3                     |                                                                                                     |
|                                                                                                                              |       |                | Continued on Sheet 2                                                                    |                 | 4                     | Note: Because of mathematical error, accidentally washed out from 28.0'-32.0' while setting casing. |
|                                                                                                                              |       |                | Note: Soils field classified in accordance with the Unified Soil Classification System. |                 | 5                     |                                                                                                     |
|                                                                                                                              |       |                |                                                                                         |                 |                       | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon with 140lb hammer falling 30".        |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE     |                                                                                                             | Hole No.                |                                |                                                                                      |
|----------------------------------|-------|---------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       | INSTALLATION Savannah, GA |                                                                                                             | SH-87                   |                                |                                                                                      |
| SHEET 2 OF 2 SHEETS              |       |                           |                                                                                                             |                         |                                |                                                                                      |
| ELEVATION                        | DEPTH | LEGEND                    | CLASSIFICATION OF MATERIALS<br>(Description)                                                                | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -35.0                            | 35.0  | c                         | d                                                                                                           | e                       | JAR                            | B1.                                                                                  |
|                                  |       |                           | SM-Gray, brown silty coarse,<br>medium sand with 10% fine<br>gravel; low silt content,<br>subangular grains |                         | 6                              | 40                                                                                   |
|                                  | 40    |                           | Silty coarse sand with some<br>fine gravel                                                                  |                         | 7                              | 43                                                                                   |
|                                  |       |                           |                                                                                                             |                         |                                | 33                                                                                   |
|                                  |       |                           |                                                                                                             |                         |                                | 18                                                                                   |
|                                  |       |                           |                                                                                                             |                         |                                | 26                                                                                   |
|                                  | 45    |                           |                                                                                                             |                         | 8                              | 51                                                                                   |
| -48.0                            |       |                           |                                                                                                             |                         |                                | 17                                                                                   |
|                                  |       |                           |                                                                                                             |                         |                                | 12                                                                                   |
| -50.0                            | 50    |                           | ML-Dark green, clayey silt<br>with 25% fine sand                                                            |                         | 9                              | 37                                                                                   |
|                                  |       |                           |                                                                                                             |                         |                                | 62                                                                                   |
|                                  |       |                           | Bottom of Hole: 50.0'                                                                                       |                         |                                |                                                                                      |

| DRILLING LOG                                                                                                                 |  | DIVISION                                                                | INSTALLATION | Hole No. | SHEET       |
|------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------|--------------|----------|-------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |  | South Atlantic                                                          | Savannah, GA | SH-70    | OF 2 SHEETS |
| 2. LOCATION (Coordinates or Station)<br>X-828814, Y-763538                                                                   |  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 4"                        |              |          |             |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                       |              |          |             |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-70                                                             |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood            |              |          |             |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 6 UNDISTURBED 0 |              |          |             |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 14. TOTAL NUMBER CORE BOXES                                             |              |          |             |
| 7. THICKNESS OF OVERBURDEN<br>60.1'                                                                                          |  | 15. ELEVATION GROUND WATER                                              |              |          |             |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |  | 16. DATE HOLE<br>STARTED 8 Sep 82 COMPLETED 8 Sep 82                    |              |          |             |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |  | 17. ELEVATION TOP OF HOLE 0.0'                                          |              |          |             |
|                                                                                                                              |  | 18. TOTAL CORE RECOVERY FOR BORING %                                    |              |          |             |
|                                                                                                                              |  | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist                      |              |          |             |

| ELEVATION<br>a | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                 | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                  |
|----------------|------------|-------------|-------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|                | 0          |             | Water                                                                                                             |                         |                              | Note: Top of Hole established at 0.0' MLW.                                                                                 |
|                | 20         |             |                                                                                                                   |                         |                              | Note: Scale changed at 20.0'                                                                                               |
|                | 25         |             |                                                                                                                   |                         |                              | Note: Checked water depth using tape with heavy weight.                                                                    |
| -27.5          |            |             | Bottom of Harbor 27.5'                                                                                            |                         |                              |                                                                                                                            |
|                | 30         |             | MH-Gray fat silt.                                                                                                 |                         | JAR                          | Note: 27.5' to 30.7' weight of rod string drove splitspoon. 30.7'-43.6' weight of rod string plus hammer drove splitspoon. |
|                | 35         |             |                                                                                                                   |                         | 1                            |                                                                                                                            |
|                | 40         |             |                                                                                                                   |                         |                              |                                                                                                                            |
| -43.6          |            |             | SM-Gray fine to medium silty sand                                                                                 |                         | 2                            |                                                                                                                            |
|                | 45         |             | With layers of gray fat silt                                                                                      |                         |                              |                                                                                                                            |
| -47.5'         |            |             | Continued on Sheet # 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                         |                              | Blows Per Foot: Number required to drive 1 3/8 ID splitspoon w/140                                                         |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE    |                                                                            | 0.0' MLW           |                         | Hole No. SH-70                                                                       |         |
|---------------------------|-------|--------------------------|----------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|---------|
| PROJECT                   |       | Savannah Harbor Widening |                                                                            | INSTALLATION       |                         | Savannah, GA                                                                         |         |
| SHEET                     |       | OF 2                     |                                                                            | SHEETS             |                         | 2                                                                                    |         |
| ELEVATION                 | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                               | % CORE<br>RECOVER. | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |         |
| a                         | b     | c                        | d                                                                          | e                  | f                       | g                                                                                    |         |
|                           | 47.5  |                          | SM-Gray fine to medium<br>silty sand with layers of<br>gray fat silt.      |                    |                         |                                                                                      | 30      |
| -51.1                     | 50    |                          | Green medium to coarse silty<br>sand with trace of fine<br>gravel and mica |                    | 3                       |                                                                                      | 100/0.9 |
| -52.6                     |       |                          | MH-Green fat silt with<br>some fine sand and mica                          |                    | 4                       |                                                                                      | 50      |
|                           | 55    |                          | SM-Green fine silty sand with<br>some mica                                 |                    | 5                       |                                                                                      | 30      |
|                           |       |                          | With trace of fine gravel                                                  |                    |                         |                                                                                      | 50      |
|                           |       |                          |                                                                            |                    |                         |                                                                                      | 20      |
|                           |       |                          |                                                                            |                    |                         |                                                                                      | 47      |
| -60.1                     | 60    |                          | With no gravel                                                             |                    | 6                       |                                                                                      | 45      |
|                           |       |                          | Bottom of Hole: -60.1'                                                     |                    |                         |                                                                                      |         |



| DRILLING LOG                                                                                         |       | DIVISION       |                                                                                                                  | INSTALLATION                                     |                   | SHEET                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------|-------|----------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT                                                                                           |       | South Atlantic |                                                                                                                  | Savannah, GA                                     |                   | OF 1 SHEETS                                                                                                                                         |  |
| Savannah Harbor Widening                                                                             |       |                |                                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" ID 5" splitspoon |                   |                                                                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)                                                                 |       |                |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)       |                   |                                                                                                                                                     |  |
| X-830688, Y-761519                                                                                   |       |                |                                                                                                                  | MLW                                              |                   |                                                                                                                                                     |  |
| 3. DRILLING AGENCY                                                                                   |       |                |                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL          |                   |                                                                                                                                                     |  |
| Savannah District                                                                                    |       |                |                                                                                                                  | Sprague Henwood                                  |                   |                                                                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                              |       | SH-69          |                                                                                                                  | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN        |                   | DISTURBED 2 UNDISTURBED 0                                                                                                                           |  |
| 5. NAME OF DRILLER                                                                                   |       | T. Scott       |                                                                                                                  | 14. TOTAL NUMBER CORE BOXES                      |                   |                                                                                                                                                     |  |
| 6. DIRECTION OF HOLE                                                                                 |       |                |                                                                                                                  | 15. ELEVATION GROUND WATER                       |                   |                                                                                                                                                     |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                                                  | 16. DATE HOLE                                    |                   | STARTED 26 Jul 82 COMPLETED 28 Jul 82                                                                                                               |  |
| 7. THICKNESS OF OVERBURDEN                                                                           |       |                |                                                                                                                  | 17. ELEVATION TOP OF HOLE                        |                   | 0.0 MLW                                                                                                                                             |  |
| 8. DEPTH DRILLED INTO ROCK                                                                           |       |                |                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING               |                   | 5                                                                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE                                                                               |       | 57.0           |                                                                                                                  | 19. SIGNATURE OF INSPECTOR                       |                   | B. Green & T. Scott                                                                                                                                 |  |
| ELEVATION                                                                                            | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                        | % CORE RECOVERY                                  | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                      |  |
| 0.0                                                                                                  | 0     |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 5     |                | Water                                                                                                            |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 10    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 15    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 20    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
| -22.0                                                                                                | 22    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 25    |                | CH-Dark gray, fat clay, with seams of SC                                                                         |                                                  | 1                 | Note: Spoon pushed by weight of drill string and hammer                                                                                             |  |
|                                                                                                      | 30    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 35    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
| -37.0                                                                                                | 37    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 40    |                | SP-Gray, medium-grained, poorly sorted sand, with some silt.                                                     |                                                  | 2                 |                                                                                                                                                     |  |
|                                                                                                      | 45    |                |                                                                                                                  |                                                  | 3                 |                                                                                                                                                     |  |
| -45.0                                                                                                | 45    |                | FLM                                                                                                              |                                                  | 4                 |                                                                                                                                                     |  |
|                                                                                                      | 50    |                | No Sample                                                                                                        |                                                  |                   | Note: Switched to 300 lb. hammer and 5 inch spoon at EL.-48.0'                                                                                      |  |
|                                                                                                      | 55    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
| -57.0                                                                                                | 57    |                |                                                                                                                  |                                                  |                   |                                                                                                                                                     |  |
|                                                                                                      | 60    |                | Bottom of Hole:-57.0'<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                  |                   | Note: Hole abandoned at EL. -57.0 due to gravel in hole.<br>Blows Per foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling. |  |

Hole No. SH-82

| DRILLING LOG                                                                                                                 |       | DIVISION                                                                | INSTALLATION                                                                                              | SHEET           |                   |                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------|-------------------|---------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       | South Atlantic                                                          | Savannah, GA                                                                                              | 1 OF 1 SHEETS   |                   |                                                                                             |
| 2. LOCATION (Coordinates or Station)<br>N-821690, Y-771180                                                                   |       | 10. SIZE AND TYPE OF CILI 3/8" TH solid round 5"                        |                                                                                                           |                 |                   |                                                                                             |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       | 11. DATUM FOR ELEVATION SHOWN (FSM or AGL) 1984<br>MLW                  |                                                                                                           |                 |                   |                                                                                             |
| 4. HOLE NO. (As shown on and file number)<br>SH-82                                                                           |       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failine 314                  |                                                                                                           |                 |                   |                                                                                             |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 9 UNDISTURBED 0 |                                                                                                           |                 |                   |                                                                                             |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 14. TOTAL NUMBER CORE BOXES 0                                           |                                                                                                           |                 |                   |                                                                                             |
| 7. THICKNESS OF OVERBURDEN 49.6'                                                                                             |       | 15. ELEVATION GROUND WATER                                              |                                                                                                           |                 |                   |                                                                                             |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       | 16. DATE HOLE STARTED 9 Sep 83 COMPLETED 10 Sep 83                      |                                                                                                           |                 |                   |                                                                                             |
| 9. TOTAL DEPTH OF HOLE 49.6'                                                                                                 |       | 17. ELEVATION TOP OF HOLE 0.0'                                          |                                                                                                           |                 |                   |                                                                                             |
|                                                                                                                              |       | 18. TOTAL CORE RECOVERY FOR BORING                                      |                                                                                                           |                 |                   |                                                                                             |
|                                                                                                                              |       | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                   |                                                                                                           |                 |                   |                                                                                             |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                                  | CLASSIFICATION OF MATERIALS (Description)                                                                 | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)              |
| 0.0'                                                                                                                         | 0     |                                                                         |                                                                                                           |                 |                   |                                                                                             |
|                                                                                                                              |       |                                                                         | Sea Water 0.0'-22.8'                                                                                      |                 |                   | Note: Change of scale at 22.0'                                                              |
| -22.8                                                                                                                        | 22    |                                                                         | Bottom of Harbor: 22.8'                                                                                   |                 |                   |                                                                                             |
| -24.3                                                                                                                        |       |                                                                         | SP-Ian fine to medium poorly graded sand with trace of silt                                               |                 | 1                 | Note: Set 6" casing to 27.4'. Reset casing to 33.0', 37.9' and 40.1'.                       |
| -25.8                                                                                                                        | 27    |                                                                         | Medium to coarse grained with trace of fine gravel                                                        |                 |                   |                                                                                             |
| -28.8                                                                                                                        |       |                                                                         | Fine to medium grained with no gravel                                                                     |                 |                   |                                                                                             |
| -31.8                                                                                                                        | 32    |                                                                         | Gray, medium to coarse grained.                                                                           |                 | 2                 | SAMPLE LAB                                                                                  |
| -33.3                                                                                                                        |       |                                                                         | Coarse grained, no silt                                                                                   |                 |                   | No. Class LL PL PI                                                                          |
| -34.8                                                                                                                        |       |                                                                         | Trace of fine gravel, layer of blue fat clay from 34.5' to 34.8'                                          |                 | 3                 | 2 SP NP NP NP 19                                                                            |
| -37.8                                                                                                                        | 37    |                                                                         | Coarse grained with trace of silt, fine gravel and layer of fat clay from 35.8' to 36.0'                  |                 |                   | 4 SP NP NP NP                                                                               |
| -42.3                                                                                                                        | 42    |                                                                         | Medium to coarse grained                                                                                  |                 | 4                 | 8 SM - - - 48                                                                               |
| -43.8                                                                                                                        |       |                                                                         | Coarse grained with trace of fine gravel, thin layer of clayey sand from 43.2'-43.5' With 15% fine gravel |                 | 5                 |                                                                                             |
| -46.8                                                                                                                        | 47    |                                                                         | SM-Green fine silty sand with trace of mica and fine gravel.                                              |                 | 6                 |                                                                                             |
| -49.6                                                                                                                        |       |                                                                         | Bottom of Hole: 49.6'                                                                                     |                 | 7                 |                                                                                             |
|                                                                                                                              |       |                                                                         | Note: Soils field classified in accordance with the Unified Soil Classification System.                   |                 | 8                 | Note: 47.9'-48.3' cleaned out hole with fishtail.                                           |
|                                                                                                                              |       |                                                                         |                                                                                                           |                 | 9                 | Blows Per Foot: Number required to drive 1 3/4" ID splitspoon w/140 lb. hammer falling 30". |

HOLE NO. V-90A

| DRILLING LOG                                                                                                                 |       | South Atlantic |                                                                                   | Savannah, Ga.                                                           |                   | SHEET 1 OF 1                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                           |       |                |                                                                                   | 10. SIZE AND TYPE OF BIT<br>3-1/2" ID Sampler                           |                   |                                                                                 |  |
| 2. LOCATION (Continuation of Section)<br>Sta. 94B, N. Side                                                                   |       |                |                                                                                   | 11. DATUM FOR ELEVATION SHOWN (FORMAL, LOCAL)<br>MLW                    |                   |                                                                                 |  |
| 3. DRILLING AGENCY<br>Alpine Geophysical Assn.                                                                               |       |                |                                                                                   | 12. MANUFACTURE'S DESIGNATION OF DRILL<br>Alpine 20' Vibro-Core Sampler |                   |                                                                                 |  |
| (If HO. 1, it shows no drawing title and file number)                                                                        |       |                |                                                                                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 0                        |                   |                                                                                 |  |
| 4. NAME OF DRILLER<br>Al Stockel                                                                                             |       |                |                                                                                   | 14. TOTAL NUMBER CORE BORES<br>1 Plastic Tube                           |                   |                                                                                 |  |
| 5. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                   | 15. ELEVATION GROUND WATER<br>Tide Gage 6.3                             |                   |                                                                                 |  |
| 6. THICKNESS OF OVERBURDEN                                                                                                   |       |                |                                                                                   | 16. DATE HOLE<br>5-24-67 5-24-67                                        |                   |                                                                                 |  |
| 7. DEPTH DRILLED INTO ROCK                                                                                                   |       |                |                                                                                   | 17. ELEVATION TOP OF HOLE<br>-36.7                                      |                   |                                                                                 |  |
| 8. TOTAL DEPTH OF HOLE<br>7.5'                                                                                               |       |                |                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>71 %                              |                   |                                                                                 |  |
|                                                                                                                              |       |                |                                                                                   | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                           |                   |                                                                                 |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY                                                         | NO. OF SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant) |  |
| -35.0                                                                                                                        |       |                |                                                                                   |                                                                         |                   | Time Sec./Ft.                                                                   |  |
|                                                                                                                              |       |                | No Sample                                                                         |                                                                         |                   | Zone-of-Core-Loss 0.5                                                           |  |
| -40.0                                                                                                                        |       |                | SM-Green, micaceous, fine, silty sand.                                            | 71                                                                      | V-90A             | -36.7 to -38.9 0.5                                                              |  |
|                                                                                                                              |       |                | ML-Green, dense, sandy silt, toward a concretion shale                            | 71                                                                      | V-90A             | 1.0                                                                             |  |
|                                                                                                                              |       |                | BOTTOM OF HOLE -44.2'                                                             | 71                                                                      | V-90A             | 1.0                                                                             |  |
|                                                                                                                              |       |                | Soils field classified in accordance with the Unified Soil Classification System. |                                                                         |                   | 110/0.108                                                                       |  |

ONLY

Hole No. CS-1

| DRILLING LOG                                            |       | DIVISION                                                                       |                                           | INSTALLATION                               |                   | SHEET                                                                          |  |
|---------------------------------------------------------|-------|--------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| PROJECT                                                 |       | <u>SOUTH ATLANTIC</u>                                                          |                                           | <u>SAVANNAH RIVER HARBOR</u>               |                   | <u>1</u> OF 2 SHEETS                                                           |  |
| 1. LOCATION (Coordinates or Station)                    |       | <u>WINGS ISLAND TIKWINE BASIN</u>                                              |                                           | 10. SIZE AND TYPE OF BIT                   |                   | <u>1 1/2" ID SPLITSPON</u>                                                     |  |
| 2. DRILLING AGENCY                                      |       | <u>SEVENHOLD DISTRICT</u>                                                      |                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL) |                   | <u>MLW</u>                                                                     |  |
| 3. HOLE NO. (As shown on drawing title and file number) |       | <u>CS 1</u>                                                                    |                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | <u>SPRUE &amp; HENNING</u>                                                     |  |
| 4. NAME OF DRILLER                                      |       | <u>J. Mc DONALD</u>                                                            |                                           | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN  |                   | <u>5</u>                                                                       |  |
| 5. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |                                           | 14. TOTAL NUMBER CORE BOXES                |                   | <u>0</u>                                                                       |  |
| 6. THICKNESS OF OVERBURDEN                              |       |                                                                                |                                           | 15. ELEVATION GROUND WATER                 |                   |                                                                                |  |
| 7. DEPTH DRILLED INTO ROCK                              |       |                                                                                |                                           | 16. DATE HOLE                              |                   | STARTED <u>3 MARCH 1973</u> COMPLETED <u>3 MARCH 1973</u>                      |  |
| 8. TOTAL DEPTH OF HOLE                                  |       | <u>45.1' BELOW MLW</u>                                                         |                                           | 17. ELEVATION TOP OF HOLE                  |                   | <u>0.0' MLW</u>                                                                |  |
|                                                         |       |                                                                                |                                           | 18. TOTAL CORE RECOVERY FOR BORING         |                   | <u>1</u>                                                                       |  |
|                                                         |       |                                                                                |                                           | 19. SIGNATURE OF INSPECTOR                 |                   | <u>Charles D. Griffin</u>                                                      |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                         | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
|                                                         | 0     |                                                                                |                                           |                                            |                   |                                                                                |  |
|                                                         | 5     |                                                                                | - WATER                                   |                                            |                   |                                                                                |  |
|                                                         | 10    |                                                                                |                                           |                                            |                   |                                                                                |  |
|                                                         | 13.6  |                                                                                | WATER DEPTH 13.6' AT MLW                  |                                            |                   |                                                                                |  |
|                                                         | 15    |                                                                                | SM. GRAY SILTY FINE & MEDIUM SAND         |                                            | 1                 | 88                                                                             |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 79                                                                             |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 81                                                                             |  |
|                                                         | 20    |                                                                                | W/GREEN                                   |                                            | 2                 | 68                                                                             |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 76                                                                             |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 84                                                                             |  |
|                                                         | 25    |                                                                                | OLIVE GREEN                               |                                            | 3                 | 93                                                                             |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 100                                                                            |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 89                                                                             |  |
|                                                         |       |                                                                                |                                           |                                            |                   | 63                                                                             |  |
|                                                         | 30    |                                                                                |                                           |                                            | 4                 | 74                                                                             |  |
| CONTINUED ON SHEET NO 2                                 |       |                                                                                |                                           |                                            |                   |                                                                                |  |

| DRILLING LOG (Cont Sheet 1)    |            | LOCATION TOP OF HOLE     |                                                                                               | -13.6 BELOW M.W.-      |                              | Hole No. CS 1                                                                                              |     |
|--------------------------------|------------|--------------------------|-----------------------------------------------------------------------------------------------|------------------------|------------------------------|------------------------------------------------------------------------------------------------------------|-----|
| PROJECT                        |            | INSTALLATION             |                                                                                               | SHEET 2 OF 2 SHEETS    |                              |                                                                                                            |     |
| KINGS ISLAND TRAINING EXERCISE |            | SUNNYSIDE DRIVE HONOLULU |                                                                                               |                        |                              |                                                                                                            |     |
| ELEVATION<br>a                 | DEPTH<br>b | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVER<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                  |     |
|                                |            |                          | SM- OLIVE GREEN<br>SILTY FINE SAND                                                            |                        | 5                            |                                                                                                            | 100 |
|                                |            |                          |                                                                                               |                        |                              |                                                                                                            | 99  |
|                                |            |                          |                                                                                               |                        |                              |                                                                                                            | 88  |
|                                | 35         |                          |                                                                                               |                        |                              |                                                                                                            | 100 |
|                                |            |                          |                                                                                               |                        |                              |                                                                                                            | 94  |
|                                |            |                          |                                                                                               |                        |                              |                                                                                                            | 88  |
|                                | 40         |                          |                                                                                               |                        |                              |                                                                                                            | 93  |
|                                |            |                          |                                                                                               |                        |                              |                                                                                                            | 76  |
|                                |            |                          |                                                                                               |                        |                              |                                                                                                            | 94  |
|                                | 45         |                          |                                                                                               |                        |                              |                                                                                                            | 98  |
|                                |            |                          | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                        |                              | <u>BLOWS PER FOOT:</u><br>Number required to drive<br>1 1/2" ID splitspoon w/140 lb<br>hammer falling 30". |     |

Hole No. CS-2

| DRILLING LOG                                                                                                                 |  | DIVISION                                                                             | INSTALLATION | SHEET 1 OF 2 SHEETS                                |                         |
|------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|--------------|----------------------------------------------------|-------------------------|
| PROJECT<br><u>Kure Island Turning Basin</u>                                                                                  |  | 10. SIZE AND TYPE OF BIT<br><u>1 1/2" ID</u>                                         |              | 11. DAYUM FOR ELEVATION SHOWN (TYM = MSL)          |                         |
| 2. LOCATION (Coordinates or S in N 100° NE W BN 16<br><u>Approx. 350' from NW 1/4 E 25E</u>                                  |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>Spencer &amp; Harrison</u>             |              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN     |                         |
| 3. DRILLING AGENCY<br><u>Seawater Division</u>                                                                               |  | 14. TOTAL NUMBER CORE BOXES<br><u>0</u>                                              |              | 15. ELEVATION GROUND WATER<br><u>In River</u>      |                         |
| 4. HOLE NO. (As shown on drawing title<br>and file number)<br><u>CS-2</u>                                                    |  | 16. DATE HOLE<br>STARTED <u>5 April 73</u> COMPLETED <u>11 April 73</u>              |              | 17. ELEVATION TOP OF HOLE<br><u>0.0' MSL</u>       |                         |
| 5. NAME OF DRILLER<br><u>ME Donnell</u>                                                                                      |  | 18. TOTAL CORE RECOVERY FOR BORING<br><u>5</u>                                       |              | 19. SIGNATURE OF INSPECTOR<br><u>Edward M. ...</u> |                         |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 7. THICKNESS OF OVERBURDEN                                                           |              | 8. DEPTH DRILLED INTO ROCK                         |                         |
| 9. TOTAL DEPTH OF HOLE<br><u>45.0'</u>                                                                                       |  | ELEVATION                                                                            |              | DEPTH                                              | LEGEND                  |
|                                                                                                                              |  | CLASSIFICATION OF MATERIALS<br>(Description)                                         |              | % CORE<br>RECOV-<br>ERY                            | BOX OR<br>SAMPLE<br>NO. |
|                                                                                                                              |  | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |              |                                                    |                         |
|                                                                                                                              |  | Water                                                                                |              | 1                                                  |                         |
|                                                                                                                              |  | Water depth 17.6' at MSL                                                             |              | 2                                                  |                         |
|                                                                                                                              |  | SP-Tan poorly graded sand                                                            |              | 3                                                  |                         |
|                                                                                                                              |  | ML-Green & Gray fine<br>sandy silt micaceous<br>slight plasticity                    |              | 4                                                  |                         |
|                                                                                                                              |  | SM-Green & Gray silty<br>fine sand micaceous<br>slight plasticity                    |              | 5                                                  |                         |

Hole No. CS-2

| DRILLING LOG                                                                                                                 |       | DIVISION | INSTALLATION                                                                                 |                 | SHEET 2<br>OF 2      |                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------|----------------------------------------------------------------------------------------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><i>Kings Island</i>                                                                                            |       |          | 14. SIZE AND TYPE OF BIT                                                                     |                 |                      |                                                                                                      |
| 2. LOCATION (Coordinate or Station)<br><i>Site 1</i>                                                                         |       |          | 11. DATUM FOR PLACING THE BIT (FROM TO MET.)<br><i>L.I.</i>                                  |                 |                      |                                                                                                      |
| 3. DRILLING AGENCY<br><i>Seaboard Air Line</i>                                                                               |       |          | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                      |                 |                      |                                                                                                      |
| 4. HOLE NO. (As shown on drawing title and file number)<br><i>CS-2</i>                                                       |       |          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                   |                 | DISTURBED            | UNDISTURBED                                                                                          |
| 5. NAME OF DRILLER<br><i>McDonnell</i>                                                                                       |       |          | 14. TOTAL NUMBER CORE BOXES                                                                  |                 | 0                    |                                                                                                      |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |          | 15. ELEVATION GROUND WATER                                                                   |                 | <i>In situ</i>       |                                                                                                      |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |          | 16. DATE HOLE                                                                                |                 | STARTED              | COMPLETED                                                                                            |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       |          | <i>5 April 73</i>                                                                            |                 | <i>11 April 73</i>   |                                                                                                      |
| 9. TOTAL DEPTH OF HOLE <i>25.0'</i>                                                                                          |       |          | 17. ELEVATION TOP OF HOLE                                                                    |                 | <i>7.5' to 14.6'</i> |                                                                                                      |
|                                                                                                                              |       |          | 18. TOTAL CORE RECOVERY FOR BORING                                                           |                 | 3                    |                                                                                                      |
|                                                                                                                              |       |          | 19. SIGNATURE OF INSPECTOR                                                                   |                 | <i>James L. ...</i>  |                                                                                                      |
| ELEVATION                                                                                                                    | DEPTH | LEGEND   | CLASSIFICATION OF MATERIALS<br>(Description)                                                 | % CORE RECOVERY | BOX OR SAMPLE NO.    | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                    |
|                                                                                                                              | 30'   |          |                                                                                              |                 | 1                    |                                                                                                      |
|                                                                                                                              | 35'   |          |                                                                                              |                 | 6                    |                                                                                                      |
|                                                                                                                              | 40'   |          | ML-Green & Gray fine<br>Sands s.l.t micaceous<br>slight plasticity                           |                 | 7                    |                                                                                                      |
|                                                                                                                              | 45'   |          |                                                                                              |                 | 8                    |                                                                                                      |
|                                                                                                                              |       |          | Soils field classified<br>in accordance with the<br>Unified Soil Classifi-<br>cation System. |                 |                      | BLOWS PER FOOT:<br>Number required to drive<br>1 1/2" ID splitspoon w/140 lb.<br>hammer falling 30". |

Hole No. CS-3

| DRILLING LOG                                                      |       | DIVISION                                  | INSTALLATION                                                           | SHEET           |                   |                                                                                |
|-------------------------------------------------------------------|-------|-------------------------------------------|------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| 1. PROJECT                                                        |       | South Atlantic                            | Savannah River                                                         | 1 OF 3 SH       |                   |                                                                                |
| 2. LOCATION (Coordinates or Station) (Approximate Sta. indicated) |       | 10. SIZE AND TYPE OF BIT                  |                                                                        |                 |                   |                                                                                |
| 3. DRILLING AGENCY                                                |       | 11. DATUM OR ELEVATION SHOWN (TTM = MSL)  |                                                                        |                 |                   |                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)           |       | 12. MANUFACTURER'S DESIGNATION OF DRILL   |                                                                        |                 |                   |                                                                                |
| 5. NAME OF DRILLER                                                |       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN |                                                                        |                 |                   |                                                                                |
| 6. DIRECTION OF HOLE                                              |       | 14. TOTAL NUMBER CORE BOXES               |                                                                        |                 |                   |                                                                                |
| 7. THICKNESS OF OVERBURDEN                                        |       | 15. ELEVATION GROUND WATER                |                                                                        |                 |                   |                                                                                |
| 8. DEPTH DRILLED INTO ROCK                                        |       | 16. DATE HOLE                             |                                                                        |                 |                   |                                                                                |
| 9. TOTAL DEPTH OF HOLE                                            |       | 17. ELEVATION TOP OF HOLE                 |                                                                        |                 |                   |                                                                                |
|                                                                   |       | 18. TOTAL CORE RECOVERY FOR BORING        |                                                                        |                 |                   |                                                                                |
|                                                                   |       | 19. SIGNATURE OF INSPECTOR                |                                                                        |                 |                   |                                                                                |
| ELEVATION                                                         | DEPTH | LEGEND                                    | CLASSIFICATION OF MATERIALS (Description)                              | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                                   | 0     |                                           |                                                                        |                 |                   |                                                                                |
|                                                                   | 5'    |                                           | Water                                                                  |                 |                   |                                                                                |
|                                                                   | 10'   |                                           | Water depth 11.9' MLW                                                  |                 |                   |                                                                                |
|                                                                   | 15'   |                                           |                                                                        |                 | 1                 | 42                                                                             |
|                                                                   | 20'   |                                           | SM - Gray & Green silty fine sand micaceous slight plasticity when wet |                 | 2                 | 45                                                                             |
|                                                                   | 25'   |                                           |                                                                        |                 | 3                 | 48                                                                             |
|                                                                   | 30'   |                                           |                                                                        |                 |                   | 42                                                                             |
|                                                                   |       |                                           |                                                                        |                 |                   | 47                                                                             |
|                                                                   |       |                                           |                                                                        |                 |                   | 58                                                                             |
|                                                                   |       |                                           |                                                                        |                 |                   | 65                                                                             |
|                                                                   |       |                                           |                                                                        |                 |                   | 67                                                                             |
|                                                                   |       |                                           |                                                                        |                 |                   | 70                                                                             |
|                                                                   |       |                                           |                                                                        |                 |                   | 72                                                                             |



Hole No. CS-3

| DRILLING LOG                                            |            | DIVISION                                                                                             |                                                                                       | INSTALLATION                               |                        | SHEET No. 1 OF 2 SH                                                                    |                                                                                                   |
|---------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. PROJECT                                              |            | South ATLANTIC                                                                                       |                                                                                       | Savannah River                             |                        |                                                                                        |                                                                                                   |
| 2. LOCATION (Coordinate or Station)                     |            | Kings Island Turning Basin                                                                           |                                                                                       | 11. SIZE AND TYPE OF BIT                   |                        |                                                                                        |                                                                                                   |
| 3. DRILLING AGENCY                                      |            | Sec Plan                                                                                             |                                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM - MSL)  |                        | M.L.W.                                                                                 |                                                                                                   |
| 4. HOLE NO. (As shown on drawing title and file number) |            | CS-3                                                                                                 |                                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                        | Savannah District                                                                      |                                                                                                   |
| 5. NAME OF DRILLER                                      |            | M.S. Donald                                                                                          |                                                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                        | DISTURBED 6 UNDISTURBED                                                                |                                                                                                   |
| 6. DIRECTION OF HOLE                                    |            | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                       | 14. TOTAL NUMBER CORE BOXES                |                        | 0                                                                                      |                                                                                                   |
| 7. THICKNESS OF OVERBURDEN                              |            |                                                                                                      |                                                                                       | 15. ELEVATION GROUND WATER                 |                        | In River                                                                               |                                                                                                   |
| 8. DEPTH DRILLED INTO ROCK                              |            |                                                                                                      |                                                                                       | 16. DATE HOLE                              |                        | STARTED 19 Dec 1973 COMPLETED 19 Dec 1973                                              |                                                                                                   |
| 9. TOTAL DEPTH OF HOLE                                  |            | 146.8'                                                                                               |                                                                                       | 17. ELEVATION TOP OF HOLE                  |                        | 0.0 at M.L.W.                                                                          |                                                                                                   |
|                                                         |            |                                                                                                      |                                                                                       | 18. TOTAL CORE RECOVERY FOR BORING         |                        | 3                                                                                      |                                                                                                   |
|                                                         |            |                                                                                                      |                                                                                       | 19. SIGNATURE OF INSPECTOR                 |                        | Donald M. Donald                                                                       |                                                                                                   |
| ELEVATION<br>e                                          | DEPTH<br>f | LEGEND<br>c                                                                                          | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                     | % CORE RECOVERY<br>g                       | BOX OR SAMPLE NO.<br>h | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>i |                                                                                                   |
|                                                         | 35'        |                                                                                                      | SM - Gray & Green silty fine sand micaceous slight plasticity when Wet                |                                            | 4-                     |                                                                                        | 65                                                                                                |
|                                                         | 40'        |                                                                                                      |                                                                                       |                                            |                        |                                                                                        | 57                                                                                                |
|                                                         | 45'        |                                                                                                      | cut out to deep with fish tail                                                        |                                            | 5                      |                                                                                        | 60                                                                                                |
|                                                         | 48'        |                                                                                                      | SM - Gray & Green silty fine sand - micaceous                                         |                                            | 6                      |                                                                                        | 73                                                                                                |
|                                                         |            |                                                                                                      |                                                                                       |                                            |                        |                                                                                        | 70                                                                                                |
|                                                         |            |                                                                                                      |                                                                                       |                                            |                        |                                                                                        | 65                                                                                                |
|                                                         |            |                                                                                                      |                                                                                       |                                            |                        |                                                                                        | 61                                                                                                |
|                                                         |            |                                                                                                      |                                                                                       |                                            |                        |                                                                                        | 100/0.95                                                                                          |
|                                                         |            |                                                                                                      | Soils field classification in accordance with the Unified Soil Classification System. |                                            |                        |                                                                                        | <u>BLOWS PER FOOT:</u><br>Number required to drive 18" ID splitspoon w/140 lb hammer falling 30". |

| DRILLING LOG                                                                                         |       | DIVISION                          | INSTALLATION                              |                 | Hole No. <u>CS-4</u>                                        |                                                                                 |
|------------------------------------------------------------------------------------------------------|-------|-----------------------------------|-------------------------------------------|-----------------|-------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1. PROJECT                                                                                           |       | <u>SOUTH ATLANTIC</u>             | <u>SAVANNAH RIVER HARBOR</u>              |                 | SHEET 1<br>OF 2 SHEETS                                      |                                                                                 |
| 2. LOCATION (Coordinates or Station)                                                                 |       | <u>KINGS ISLAND TURNING BASIN</u> | M. SIZE AND TYPE OF BIT                   |                 | <u>1 1/2" H.S. DOUBLE FLUTE</u>                             |                                                                                 |
| 3. DRILLING AGENCY                                                                                   |       | <u>75° NORTH - 25° E OF TRUE</u>  | T1 DATUM FOR ELEVATION SHOWN (TBM or MLL) |                 | <u>MLL</u>                                                  |                                                                                 |
| 4. HOLE NO. (As shown on drawing title and file number)                                              |       | <u>SAVANNAH DISTRICT</u>          | 12. MANUFACTURER'S DESIGNATION OF DRILL   |                 | <u>FAIRING #14</u>                                          |                                                                                 |
| 5. NAME OF DRILLER                                                                                   |       | <u>CS-4</u>                       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN |                 | DISTURBED <u>7</u> UNDISTURBED <u>0</u>                     |                                                                                 |
| 6. DIRECTION OF HOLE                                                                                 |       | <u>C. McDONALD</u>                | 14. TOTAL NUMBER CORE BOXES               |                 | <u>0</u>                                                    |                                                                                 |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                                   | 15. ELEVATION GROUND WATER                |                 |                                                             |                                                                                 |
| 7. THICKNESS OF OVERBURDEN                                                                           |       |                                   | 16. DATE HOLE                             |                 | STARTED <u>21 APRIL 1973</u> COMPLETED <u>23 APRIL 1973</u> |                                                                                 |
| 8. DEPTH DRILLED INTO ROCK                                                                           |       |                                   | 17. ELEVATION TOP OF HOLE                 |                 | <u>0.0 MLL</u>                                              |                                                                                 |
| 9. TOTAL DEPTH OF HOLE                                                                               |       | <u>46.0' FERRIS MLL</u>           | 18. TOTAL CORE RECOVERY FOR BORING        |                 | <u>2</u>                                                    |                                                                                 |
|                                                                                                      |       |                                   | 19. SIGNATURE OF INSPECTOR                |                 | <u>Charles D. Driller</u>                                   |                                                                                 |
| ELEVATION                                                                                            | DEPTH | LEGEND                            | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO.                                           | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant) |
|                                                                                                      | 0     |                                   |                                           |                 | 1                                                           | 18                                                                              |
|                                                                                                      | 5     |                                   | SM-TAN SILTY FINE & MEDIUM SAND           |                 | 2                                                           | 10                                                                              |
|                                                                                                      | 10    |                                   |                                           |                 | 3                                                           | 12                                                                              |
|                                                                                                      | 15    |                                   |                                           |                 | 4                                                           | 18                                                                              |
|                                                                                                      | 20    |                                   |                                           |                 | 5                                                           | 17                                                                              |
|                                                                                                      | 25    |                                   | SP SM-TAN POORLY GRADED SAND              |                 | 6                                                           | 19                                                                              |
|                                                                                                      | 30    |                                   |                                           |                 |                                                             | 16                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 20                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 21                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 22                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 35                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 30                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 34                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 26                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 29                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 36                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 21                                                                              |
|                                                                                                      |       |                                   |                                           |                 |                                                             | 12                                                                              |

CONTINUED ON SHEET NO 2

| DRILLING LOG (Cont Sheet) |       | LOCATION TOP OF HOLE                                                              |                                                                                               | Hole No.                  |                         |                                                                                                       |
|---------------------------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------|-------------------------|-------------------------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION                                                                      |                                                                                               | SHEET                     |                         |                                                                                                       |
| KINGS ISLAND TUGBOG BASIN |       | 0.3 BELOW MSL                                                                     |                                                                                               | CS-A                      |                         |                                                                                                       |
|                           |       | SAYUNAH RIVER WATERS                                                              |                                                                                               | OF 2 SHEETS               |                         |                                                                                                       |
| ELEVATION                 | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                  |
| a                         | b     | c                                                                                 | d                                                                                             | e                         | f                       | g                                                                                                     |
|                           | 35    |  | CH - GRAY FAT CLAY<br>SLIGHTLY MICACEOUS                                                      |                           |                         | BLOWS<br>51<br>49<br>41<br>68<br>61<br>59                                                             |
|                           | 40    |  | SP, SM - GREEN POORLY<br>GRADED SAND                                                          |                           | 7                       | 71<br>72<br>68<br>59                                                                                  |
| -46.3                     | 45    |                                                                                   |                                                                                               |                           |                         |                                                                                                       |
|                           |       |                                                                                   | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                           |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 1/2" ID split spoon w/140 lb.<br>hammer falling 30". |

| DRILLING LOG                                         |       | DIVISION                                                                       |                                           | 11. ALLATION                                  |                   | SHEET /                                                                          |  |
|------------------------------------------------------|-------|--------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------|-------------------|----------------------------------------------------------------------------------|--|
| PROJECT                                              |       | SOUTH ATLANTIC                                                                 |                                           | SAVANNAH 1ER HARBOR                           |                   | OF 2 SHEETS                                                                      |  |
| LOCATION (Continued or Station)                      |       | KINGS ISLAND TURNING BASIN                                                     |                                           | 10. SIZE AND TYPE OF BIT 1 7/8" 10 SPLITSPEAR |                   |                                                                                  |  |
| 1. LOCATION                                          |       | TO 1001.250 AT WATERS EDGE                                                     |                                           | 11. SATURN FOR ELEVATION SHOWN (FROM OR TO)   |                   |                                                                                  |  |
| DRILLING AGENCY                                      |       | SAVANNAH DISTRICT                                                              |                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL       |                   | M L M                                                                            |  |
| HOLE NO. (as shown on drawing title and site number) |       | CS 5                                                                           |                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN    |                   | 9                                                                                |  |
| 14. NAME OF DRILLER                                  |       | J. McDONALD                                                                    |                                           | 15. ELEVATION GROUND WATER                    |                   |                                                                                  |  |
| 16. DIRECTION OF HOLE                                |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |                                           | 17. DATE HOLE                                 |                   | STARTED 26 APRIL 1978 COMPLETED 26 APRIL 1978                                    |  |
| 17. THICKNESS OF OVERBURDEN                          |       |                                                                                |                                           | 18. ELEVATION TOP OF HOLE                     |                   | 0.0' MLW                                                                         |  |
| 18. DEPTH DRILLED INTO ROCK                          |       |                                                                                |                                           | 19. TOTAL CORE RECOVERY FOR BORING            |                   | 3                                                                                |  |
| 19. TOTAL DEPTH OF HOLE                              |       | 45.9' BELOW MLW                                                                |                                           | 20. SIGNATURE OF INSPECTOR                    |                   | Charles D. Griffin                                                               |  |
| ELEVATION                                            | DEPTH | LEGEND                                                                         | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water level, depth of penetration, etc., if significant) |  |
|                                                      | 0     |                                                                                |                                           |                                               | 1                 | Blows                                                                            |  |
|                                                      | 5     | WATER                                                                          | WATER DEPTH 1.5' AT MLW                   |                                               |                   |                                                                                  |  |
|                                                      | 5     |                                                                                | ML GRAY INORGANIC SILT                    |                                               |                   |                                                                                  |  |
|                                                      | 10    |                                                                                |                                           |                                               |                   |                                                                                  |  |
|                                                      | 15    |                                                                                |                                           |                                               |                   |                                                                                  |  |
|                                                      | 20    |                                                                                |                                           |                                               |                   |                                                                                  |  |
|                                                      | 25    |                                                                                | SM-TAN & GRAY SILTY FINE MEDIUM SAND      |                                               | 2                 |                                                                                  |  |
|                                                      | 30    |                                                                                | CONTINUED ON SHEET 402                    |                                               |                   |                                                                                  |  |

| DRILLING LOG (Cont Sheet)                     |            | Hole No. <b>CS 5</b>                                                                                        |                                                   |
|-----------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| PROJECT<br><b>KINGS ISLAND TIDALING REFIN</b> |            | INSTALLATION<br><b>SLYDANONH CIVIL ENGINE</b>                                                               |                                                   |
| ELEVATION<br>a                                | DEPTH<br>b | LEGEND<br>c                                                                                                 | CLASSIFICATION OF MATERIALS<br>(Description)<br>d |
|                                               |            | % CORE<br>RECOVER<br>ERY<br>e                                                                               | BOX OR<br>SAMPLE<br>NO.<br>f                      |
|                                               |            | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                   |                                                   |
|                                               | 30         |                                                                                                             | CL- GREEN & GRAY<br>SILTY SANDY CLAY              |
|                                               | 35         |                                                                                                             | SP SM- GREEN<br>POORLY GRADED<br>SANDY SAND       |
|                                               | 40         |                                                                                                             |                                                   |
|                                               | 45         |                                                                                                             |                                                   |
|                                               |            | <b>NOTE:</b> Soils field classified<br>in accordance with the Unified<br>Soil Classification System.        |                                                   |
|                                               |            | <b>BLOWS PER FOOT:</b><br>Number required to drive<br>1 1/2" ID splitspoon w/140 lb.<br>hammer falling 30". |                                                   |

| DRILLING LOG                               |       | DIVISION                                                                                             |                                               | INSTALLATION                                               |                      | Hole No. <u>C.S. 6</u>                                                         |  |
|--------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------|--|
| PROJECT                                    |       | <u>SOUTH ATLANTIC</u>                                                                                |                                               | <u>SAVANNAH RIVER HARBOR</u>                               |                      | SHEET <u>1</u>                                                                 |  |
| LOCATION (Coordinates or Station)          |       | <u>KINGS ISLAND TURNING BASIN</u>                                                                    |                                               | 10. SIZE AND TYPE OF BIT <u>1 1/2" ID SPLIT SPDR</u>       |                      | OF <u>2</u> SHEETS                                                             |  |
| DRILLING AGENCY                            |       | <u>NORTH 50° OF BN 14</u>                                                                            |                                               | 11. DATUM FOR ELEVATION SHOWN <u>MLW</u>                   |                      |                                                                                |  |
| HOLE NO. (As shown on drawing title)       |       | <u>SAVANNAH DISTRICT</u>                                                                             |                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL <u>FAIRING 314</u> |                      |                                                                                |  |
| Hole No. (As shown on drawing title)       |       | <u>CS 6</u>                                                                                          |                                               | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                  |                      | DISTURBED <u>4</u> UNDISTURBED <u>0</u>                                        |  |
| NAME OF DRILLER                            |       | <u>L. MC DONALD</u>                                                                                  |                                               | 14. TOTAL NUMBER CORE BOXES                                |                      |                                                                                |  |
| DIRECTION OF HOLE                          |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                               | 15. ELEVATION GROUND WATER                                 |                      |                                                                                |  |
| THICKNESS OF OVERBURDEN                    |       |                                                                                                      |                                               | 16. DATE HOLE                                              |                      | STARTED <u>27 APRIL 1973</u> COMPLETED <u>27 APRIL 1973</u>                    |  |
| DEPTH DRILLED INTO ROCK                    |       |                                                                                                      |                                               | 17. ELEVATION TOP OF HOLE <u>0.0' MLW</u>                  |                      |                                                                                |  |
| TOTAL DEPTH OF HOLE <u>29.8' BELOW MLW</u> |       |                                                                                                      |                                               | 18. TOTAL CORE RECOVERY FOR BORING                         |                      | <u>3</u>                                                                       |  |
|                                            |       |                                                                                                      |                                               | 19. SIGNATURE OF INSPECTOR                                 |                      | <u>Charles D. Griffin</u>                                                      |  |
| ELEVATION                                  | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)     | 1. CORE RECOVERY                                           | 2. BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 17.5                                       | 0     |                                                                                                      |                                               |                                                            |                      | REMARKS                                                                        |  |
|                                            | 5     |                                                                                                      | WATER                                         |                                                            |                      | SLUGS                                                                          |  |
|                                            | 10    |                                                                                                      |                                               |                                                            |                      |                                                                                |  |
|                                            | 15    |                                                                                                      |                                               |                                                            |                      |                                                                                |  |
|                                            | 20    |                                                                                                      | ML - GRAY INORGANIC SILT W/ SILTY SAND LAYERS |                                                            |                      |                                                                                |  |
|                                            | 25    |                                                                                                      | CH - GRAY FAT CLAY W/ GRAVEL                  |                                                            |                      |                                                                                |  |
|                                            | 30    |                                                                                                      | CONTINUED ON SHEET No. <u>2</u>               |                                                            |                      |                                                                                |  |



| DRILLING LOG (Cont. Sheet) |       | LOCATION TOP OF HOLE  |                                                                                               | Hole No.                  |                         |                                                                                                     |
|----------------------------|-------|-----------------------|-----------------------------------------------------------------------------------------------|---------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
| PROJECT                    |       | INSTALLATION          |                                                                                               | SHEET                     |                         |                                                                                                     |
| KINGS ISLAND TURNING BASIN |       | 16.5' BELOW ML        |                                                                                               | CS 6                      |                         |                                                                                                     |
| KINGS ISLAND TURNING BASIN |       | SAVANNAH RIVER HARBOR |                                                                                               | SHEET 2 OF 2 SHEETS       |                         |                                                                                                     |
| ELEVATION                  | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| 30                         |       |                       | 54- GRAY SILTY FINE<br>MEDIUM SAND                                                            |                           |                         | BLOWS                                                                                               |
|                            |       |                       |                                                                                               |                           |                         | 21                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 32                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 34                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 41                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 40                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 43                                                                                                  |
|                            |       |                       | GREEN, SLIGHTLY<br>MICACEOUS                                                                  |                           | 4                       | 46                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 49                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 51                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 52                                                                                                  |
|                            |       |                       |                                                                                               |                           |                         | 56                                                                                                  |
| 46.5                       |       |                       | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                           |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 1/2" ID. splitspoon w/140 lb<br>hammer falling 30" |

| DRILLING LOG                                            |       | DIVISION                                     | INSTALLATION                                 | Hole No.        | SHEET             |                                                                                |
|---------------------------------------------------------|-------|----------------------------------------------|----------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| PROJECT                                                 |       | SQUAD ATLANTIC                               | SAVANNAH R. & HARBOR                         | CS-7            | OF 2 SHEETS       |                                                                                |
| 1. PROJECT                                              |       | MINAS ISLAND TURNING BASIN                   |                                              |                 |                   |                                                                                |
| 2. LOCATION (Coordinates or Station) SEE PLAN           |       | 10. SIZE AND TYPE OF BIT 1 1/2" 10 SPUR-POIN |                                              |                 |                   |                                                                                |
| 3. LOCATION (Coordinates or Station) SEE PLAN           |       | 11. DATUM FOR ELEVATION KNOWN (EAM or JBM)   |                                              |                 |                   |                                                                                |
| 4. DRILLING AGENCY                                      |       | 12. MANUFACTURER'S DESIGNATION OF DRILL      |                                              |                 |                   |                                                                                |
| 5. HOLE NO. (As shown on drawing (HMA) and file number) |       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN    |                                              |                 |                   |                                                                                |
| 6. NAME OF DRILLER                                      |       | 14. TOTAL NUMBER CORE BOXES                  |                                              |                 |                   |                                                                                |
| 7. DIRECTION OF HOLE                                    |       | 15. ELEVATION GROUND WATER                   |                                              |                 |                   |                                                                                |
| 8. THICKNESS OF OVERBURDEN                              |       | 16. DATE HOLE                                |                                              |                 |                   |                                                                                |
| 9. DEPTH DRILLED INTO ROCK                              |       | 17. ELEVATION TOP OF HOLE                    |                                              |                 |                   |                                                                                |
| 10. TOTAL DEPTH OF HOLE                                 |       | 18. TOTAL CORE RECOVERY FOR BORING           |                                              |                 |                   |                                                                                |
| 11. SIGNATURE OF INSPECTOR                              |       | 19. SIGNATURE OF INSPECTOR                   |                                              |                 |                   |                                                                                |
| ELEVATION                                               | DEPTH | LEGEND                                       | CLASSIFICATION OF MATERIALS (Description)    | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
| -0.8                                                    |       |                                              | WATER DEPTH 2.8' AT MLW                      |                 |                   |                                                                                |
| 5                                                       |       |                                              | ML - GRAY INORGANIC SILT W/SILTY SAND LAYERS |                 | 1                 |                                                                                |
| 10                                                      |       |                                              |                                              |                 |                   |                                                                                |
| 15                                                      |       |                                              | CH - GRAY FAT CLAY W/GRAVEL                  |                 | 2                 |                                                                                |
| 20                                                      |       |                                              | SM - GRAY SILTY FINE MEDIUM SAND             |                 | 3                 |                                                                                |
| 25                                                      |       |                                              |                                              |                 |                   |                                                                                |
| 30                                                      |       |                                              | GREEN, SLIGHTLY MICROBIAL                    |                 | 4                 |                                                                                |
|                                                         |       |                                              | CONTINUED ON SHEET NO. 2                     |                 |                   |                                                                                |



| DRILLING LOG (Cont Sheet)         |       | LOCATION TOP OF HOLE          |                                                                                               | Hole No. <u>CS 7</u>                                                                               |                         |                                                                                       |
|-----------------------------------|-------|-------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------|
| SOURCE                            |       | INSTALLATION                  |                                                                                               | SHEET <u>2</u> OF <u>2</u> SHEETS                                                                  |                         |                                                                                       |
| <u>KINGS ISLAND TURNING BASIN</u> |       | <u>SAYALYNH RIVER HARBOUR</u> |                                                                                               |                                                                                                    |                         |                                                                                       |
| ELEVATION                         | DEPTH | LEGEND                        | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVERY                                                                                 | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling unit, water level, depth of<br>weathering, etc., if significant) |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | BLOWS                                                                                 |
|                                   | 30    |                               |                                                                                               |                                                                                                    |                         | 51                                                                                    |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | 54                                                                                    |
|                                   | 35    |                               | SM. GREEN SILTY FINE<br>SAND, SLIGHTLY<br>MICACEOUS                                           |                                                                                                    |                         | 62                                                                                    |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | 64                                                                                    |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | 59                                                                                    |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | 61                                                                                    |
|                                   | 40    |                               |                                                                                               |                                                                                                    |                         | 62                                                                                    |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | 60                                                                                    |
|                                   |       |                               |                                                                                               |                                                                                                    |                         | 58                                                                                    |
| 45.5                              | 45    |                               |                                                                                               |                                                                                                    | 5                       | 51                                                                                    |
|                                   |       |                               | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. | BLOWS PER FOOT<br>Number required to drive<br>1 1/2" ID split spoon w/140 lb<br>hammer falling 30" |                         |                                                                                       |

| DRILLING LOG                                                                                                                 |  | DIVISION                                                              | INSTALLATION     | Hole No.    | SHEET         |
|------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------|------------------|-------------|---------------|
| 1. PROJECT<br><i>Kings Island Tugboat Basin</i>                                                                              |  | <i>South Atlantic</i>                                                 | <i>U.S. Navy</i> | <i>CS-8</i> | 1 OF 2 SHEETS |
| 2. LOCATION (Coordinates or Station)<br><i>Opposite Sta. 78+330</i>                                                          |  | 10. SIZE AND TYPE OF BIT<br><i>1 1/4" J.D. 5-1/2" O.D.</i>            |                  |             |               |
| 3. DEPTH TO WATER<br><i>100' from Water Edge</i>                                                                             |  | 11. DATUM FOR ELEVATION SHOWN (TBM = MLL)<br><i>MLW</i>               |                  |             |               |
| 4. HOLE NO. (As shown on drawing title and file number)<br><i>CS-8</i>                                                       |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><i>314 Failure</i>         |                  |             |               |
| 5. NAME OF DRILLER<br><i>M. S. Doran</i>                                                                                     |  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN<br><i>4</i>            |                  |             |               |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 14. TOTAL NUMBER CORE BOXES<br><i>0</i>                               |                  |             |               |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |  | 15. ELEVATION GROUND WATER<br><i>Boring In Pipe</i>                   |                  |             |               |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |  | 16. DATE HOLE<br>STARTED <i>30 April 73</i> COMPLETED <i>1 May 73</i> |                  |             |               |
| 9. TOTAL DEPTH OF HOLE<br><i>150'</i>                                                                                        |  | 17. ELEVATION TOP OF HOLE                                             |                  |             |               |
|                                                                                                                              |  | 18. TOTAL CORE RECOVERY FOR BORING                                    |                  |             |               |
|                                                                                                                              |  | 19. SIGNATURE OF INSPECTOR<br><i>Elmer J. McLeod</i>                  |                  |             |               |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|-----------|-------|--------|----------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| 20.0      | 0     |        |                                              |                    |                         |                                                                                      |
| 15.0      | 5     |        |                                              |                    |                         |                                                                                      |
| 10.0      | 10    |        |                                              |                    |                         |                                                                                      |
| 5.0       | 15    |        | Water                                        |                    |                         |                                                                                      |
| 0.0       | 30    |        | Bottom at MLW 30.0                           |                    |                         |                                                                                      |

Hole No. C5-8

| DRILLING LOG                                                                                                                 |       | DIVISION                                                            | INSTALLATION                                                                      |                  |                   |                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------|-------------------|-----------------------------------------------------------------------------------------------|
| 1. PROJECT<br><u>Kings Island Temporary Base</u>                                                                             |       | <u>South Atlantic</u>                                               | <u>U.S. Navy</u>                                                                  |                  |                   |                                                                                               |
| 2. LOCATION (Coordinates or Station)<br><u>See Plan</u>                                                                      |       | 10. SIZE AND TYPE OF BIT <u>1 3/4" ID Split Spoon</u>               |                                                                                   |                  |                   |                                                                                               |
| 3. DRILLING AGENCY<br><u>San Diego District</u>                                                                              |       | 11. DATUM FOR ELEVATION SHOWN (FSM or MLL)<br><u>N.W.</u>           |                                                                                   |                  |                   |                                                                                               |
| 4. HOLE NO. (As shown on drawings and file number)<br><u>C5-8</u>                                                            |       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>314 Feline</u>        |                                                                                   |                  |                   |                                                                                               |
| 5. NAME OF DRILLER<br><u>McDonnell</u>                                                                                       |       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                           |                                                                                   |                  |                   |                                                                                               |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 14. TOTAL NUMBER CORE BOXES <u>0</u>                                |                                                                                   |                  |                   |                                                                                               |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       | 15. ELEVATION FROM GROUND WATER <u>Barry I. M. R. 100</u>           |                                                                                   |                  |                   |                                                                                               |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       | 16. DATE HOLE STARTED <u>30 Apr. 1952</u> COMPLETED <u>1 May 52</u> |                                                                                   |                  |                   |                                                                                               |
| 9. TOTAL DEPTH OF HOLE <u>45.0'</u>                                                                                          |       | 17. ELEVATION TOP OF HOLE                                           |                                                                                   |                  |                   |                                                                                               |
|                                                                                                                              |       | 18. TOTAL CORE RECOVERY FOR BORING                                  |                                                                                   |                  |                   |                                                                                               |
|                                                                                                                              |       | 19. SIGNATURE OF INSPECTOR <u>Edward J. McLaughlin</u>              |                                                                                   |                  |                   |                                                                                               |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                              | CLASSIFICATION OF MATERIALS (Description)                                         | 1. CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of measuring, etc., if significant)                 |
| 33.4                                                                                                                         | 12    |                                                                     | SM - Gray silty sand with layers dark gray OH                                     | 1                | 1                 | NX casing set at 33.4' advanced to 37.9'                                                      |
| 35                                                                                                                           | 14    |                                                                     | SP - Gray poorly graded sand                                                      | 2                | 2                 |                                                                                               |
| 40                                                                                                                           | 19    |                                                                     | SM - Green silty fine sand micaceous slight plasticity white, wet                 | 3                | 3                 |                                                                                               |
| 45                                                                                                                           | 24    |                                                                     |                                                                                   | 4                | 4                 |                                                                                               |
|                                                                                                                              |       |                                                                     | Soils field classified in accordance with the Unified Soil Classification System. |                  |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/4" ID split spoon w/140 lb hammer falling 30" |

| DRILLING LOG                                            |       | DIVISION                                                                                       | INSTALLATION                               | SHEET                               |                   |         |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------|-------------------|---------|
| PROJECT                                                 |       | South Atlantic                                                                                 | Savannah River                             | 1 OF 2 SHEETS                       |                   |         |
| 1. PROJECT                                              |       | Kings Island Tunnage Basin                                                                     | 10. SIZE AND TYPE OF BIT                   | 1 3/4" ID Split Spoon               |                   |         |
| 2. LOCATION (Coordinates or Station)                    |       | OPPOSITE SO. 9400                                                                              | 11. DATUM FOR ELEVATION SHOW (TBM or ASL)  | MLW                                 |                   |         |
| 3. DEPTH, 25' FROM WATERS EDGE                          |       | LING AGENCY                                                                                    | 12. MANUFACTURER'S DESIGNATION OF DRILL    | 3" Gilson                           |                   |         |
| 4. HOLE NO. (As shown on drawing title) and file number |       | CS-9                                                                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED 6 UNDISTURBED             |                   |         |
| 5. NAME OF DRILLER                                      |       | MS Decker                                                                                      | 14. TOTAL NUMBER CORE BOXES                | 0                                   |                   |         |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT. | 15. ELEVATION-GROUND WATER                 | Boring In River                     |                   |         |
| 7. THICKNESS OF OVERBURDEN                              |       |                                                                                                | 16. DATE HOLE                              | STARTED 2 May 73 COMPLETED 2 May 73 |                   |         |
| 8. DEPTH DRILLED INTO ROCK                              |       |                                                                                                | 17. ELEVATION TOP OF HOLE                  |                                     |                   |         |
| 9. TOTAL DEPTH OF HOLE                                  |       | 25.4'                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING         | 1                                   |                   |         |
|                                                         |       |                                                                                                | 19. SIGNATURE OF INSPECTOR                 | John J. Phillips                    |                   |         |
| ELEVATION                                               | DEPTH | LEGEND                                                                                         | CLASSIFICATION OF MATERIALS (Description)  | CORE RECOVERY                       | BOX OR SAMPLE NO. | REMARKS |
| 0'                                                      | 0'    |                                                                                                |                                            |                                     |                   |         |
| 5'                                                      | 5'    |                                                                                                |                                            |                                     |                   |         |
| 10'                                                     | 10'   |                                                                                                | Water                                      |                                     |                   |         |
| 15'                                                     | 15'   |                                                                                                |                                            |                                     |                   |         |
| 20'                                                     | 20'   |                                                                                                | Water depth 20.2' MLW                      |                                     |                   |         |
| 25'                                                     | 25'   |                                                                                                | MH-Green elastic silt                      |                                     |                   |         |
| 30'                                                     | 30'   |                                                                                                | SP- Gray poorly graded sand                |                                     |                   |         |
| 35'                                                     | 35'   |                                                                                                |                                            |                                     |                   |         |
| 40'                                                     | 40'   |                                                                                                |                                            |                                     |                   |         |
| 45'                                                     | 45'   |                                                                                                |                                            |                                     |                   |         |
| 50'                                                     | 50'   |                                                                                                |                                            |                                     |                   |         |
| 55'                                                     | 55'   |                                                                                                |                                            |                                     |                   |         |
| 60'                                                     | 60'   |                                                                                                |                                            |                                     |                   |         |
| 65'                                                     | 65'   |                                                                                                |                                            |                                     |                   |         |
| 70'                                                     | 70'   |                                                                                                |                                            |                                     |                   |         |
| 75'                                                     | 75'   |                                                                                                |                                            |                                     |                   |         |
| 80'                                                     | 80'   |                                                                                                |                                            |                                     |                   |         |
| 85'                                                     | 85'   |                                                                                                |                                            |                                     |                   |         |
| 90'                                                     | 90'   |                                                                                                |                                            |                                     |                   |         |
| 95'                                                     | 95'   |                                                                                                |                                            |                                     |                   |         |
| 100'                                                    | 100'  |                                                                                                |                                            |                                     |                   |         |
| 105'                                                    | 105'  |                                                                                                |                                            |                                     |                   |         |
| 110'                                                    | 110'  |                                                                                                |                                            |                                     |                   |         |
| 115'                                                    | 115'  |                                                                                                |                                            |                                     |                   |         |
| 120'                                                    | 120'  |                                                                                                |                                            |                                     |                   |         |
| 125'                                                    | 125'  |                                                                                                |                                            |                                     |                   |         |
| 130'                                                    | 130'  |                                                                                                |                                            |                                     |                   |         |
| 135'                                                    | 135'  |                                                                                                |                                            |                                     |                   |         |
| 140'                                                    | 140'  |                                                                                                |                                            |                                     |                   |         |
| 145'                                                    | 145'  |                                                                                                |                                            |                                     |                   |         |
| 150'                                                    | 150'  |                                                                                                |                                            |                                     |                   |         |
| 155'                                                    | 155'  |                                                                                                |                                            |                                     |                   |         |
| 160'                                                    | 160'  |                                                                                                |                                            |                                     |                   |         |
| 165'                                                    | 165'  |                                                                                                |                                            |                                     |                   |         |
| 170'                                                    | 170'  |                                                                                                |                                            |                                     |                   |         |
| 175'                                                    | 175'  |                                                                                                |                                            |                                     |                   |         |
| 180'                                                    | 180'  |                                                                                                |                                            |                                     |                   |         |
| 185'                                                    | 185'  |                                                                                                |                                            |                                     |                   |         |
| 190'                                                    | 190'  |                                                                                                |                                            |                                     |                   |         |
| 195'                                                    | 195'  |                                                                                                |                                            |                                     |                   |         |
| 200'                                                    | 200'  |                                                                                                |                                            |                                     |                   |         |
| 205'                                                    | 205'  |                                                                                                |                                            |                                     |                   |         |
| 210'                                                    | 210'  |                                                                                                |                                            |                                     |                   |         |
| 215'                                                    | 215'  |                                                                                                |                                            |                                     |                   |         |
| 220'                                                    | 220'  |                                                                                                |                                            |                                     |                   |         |
| 225'                                                    | 225'  |                                                                                                |                                            |                                     |                   |         |
| 230'                                                    | 230'  |                                                                                                |                                            |                                     |                   |         |
| 235'                                                    | 235'  |                                                                                                |                                            |                                     |                   |         |
| 240'                                                    | 240'  |                                                                                                |                                            |                                     |                   |         |
| 245'                                                    | 245'  |                                                                                                |                                            |                                     |                   |         |
| 250'                                                    | 250'  |                                                                                                |                                            |                                     |                   |         |
| 255'                                                    | 255'  |                                                                                                |                                            |                                     |                   |         |
| 260'                                                    | 260'  |                                                                                                |                                            |                                     |                   |         |
| 265'                                                    | 265'  |                                                                                                |                                            |                                     |                   |         |
| 270'                                                    | 270'  |                                                                                                |                                            |                                     |                   |         |
| 275'                                                    | 275'  |                                                                                                |                                            |                                     |                   |         |
| 280'                                                    | 280'  |                                                                                                |                                            |                                     |                   |         |
| 285'                                                    | 285'  |                                                                                                |                                            |                                     |                   |         |
| 290'                                                    | 290'  |                                                                                                |                                            |                                     |                   |         |
| 295'                                                    | 295'  |                                                                                                |                                            |                                     |                   |         |
| 300'                                                    | 300'  |                                                                                                |                                            |                                     |                   |         |
| 305'                                                    | 305'  |                                                                                                |                                            |                                     |                   |         |
| 310'                                                    | 310'  |                                                                                                |                                            |                                     |                   |         |
| 315'                                                    | 315'  |                                                                                                |                                            |                                     |                   |         |
| 320'                                                    | 320'  |                                                                                                |                                            |                                     |                   |         |
| 325'                                                    | 325'  |                                                                                                |                                            |                                     |                   |         |
| 330'                                                    | 330'  |                                                                                                |                                            |                                     |                   |         |
| 335'                                                    | 335'  |                                                                                                |                                            |                                     |                   |         |
| 340'                                                    | 340'  |                                                                                                |                                            |                                     |                   |         |
| 345'                                                    | 345'  |                                                                                                |                                            |                                     |                   |         |
| 350'                                                    | 350'  |                                                                                                |                                            |                                     |                   |         |
| 355'                                                    | 355'  |                                                                                                |                                            |                                     |                   |         |
| 360'                                                    | 360'  |                                                                                                |                                            |                                     |                   |         |
| 365'                                                    | 365'  |                                                                                                |                                            |                                     |                   |         |
| 370'                                                    | 370'  |                                                                                                |                                            |                                     |                   |         |
| 375'                                                    | 375'  |                                                                                                |                                            |                                     |                   |         |
| 380'                                                    | 380'  |                                                                                                |                                            |                                     |                   |         |
| 385'                                                    | 385'  |                                                                                                |                                            |                                     |                   |         |
| 390'                                                    | 390'  |                                                                                                |                                            |                                     |                   |         |
| 395'                                                    | 395'  |                                                                                                |                                            |                                     |                   |         |
| 400'                                                    | 400'  |                                                                                                |                                            |                                     |                   |         |
| 405'                                                    | 405'  |                                                                                                |                                            |                                     |                   |         |
| 410'                                                    | 410'  |                                                                                                |                                            |                                     |                   |         |
| 415'                                                    | 415'  |                                                                                                |                                            |                                     |                   |         |
| 420'                                                    | 420'  |                                                                                                |                                            |                                     |                   |         |
| 425'                                                    | 425'  |                                                                                                |                                            |                                     |                   |         |
| 430'                                                    | 430'  |                                                                                                |                                            |                                     |                   |         |
| 435'                                                    | 435'  |                                                                                                |                                            |                                     |                   |         |
| 440'                                                    | 440'  |                                                                                                |                                            |                                     |                   |         |
| 445'                                                    | 445'  |                                                                                                |                                            |                                     |                   |         |
| 450'                                                    | 450'  |                                                                                                |                                            |                                     |                   |         |
| 455'                                                    | 455'  |                                                                                                |                                            |                                     |                   |         |
| 460'                                                    | 460'  |                                                                                                |                                            |                                     |                   |         |
| 465'                                                    | 465'  |                                                                                                |                                            |                                     |                   |         |
| 470'                                                    | 470'  |                                                                                                |                                            |                                     |                   |         |
| 475'                                                    | 475'  |                                                                                                |                                            |                                     |                   |         |
| 480'                                                    | 480'  |                                                                                                |                                            |                                     |                   |         |
| 485'                                                    | 485'  |                                                                                                |                                            |                                     |                   |         |
| 490'                                                    | 490'  |                                                                                                |                                            |                                     |                   |         |
| 495'                                                    | 495'  |                                                                                                |                                            |                                     |                   |         |
| 500'                                                    | 500'  |                                                                                                |                                            |                                     |                   |         |
| 505'                                                    | 505'  |                                                                                                |                                            |                                     |                   |         |
| 510'                                                    | 510'  |                                                                                                |                                            |                                     |                   |         |
| 515'                                                    | 515'  |                                                                                                |                                            |                                     |                   |         |
| 520'                                                    | 520'  |                                                                                                |                                            |                                     |                   |         |
| 525'                                                    | 525'  |                                                                                                |                                            |                                     |                   |         |
| 530'                                                    | 530'  |                                                                                                |                                            |                                     |                   |         |
| 535'                                                    | 535'  |                                                                                                |                                            |                                     |                   |         |
| 540'                                                    | 540'  |                                                                                                |                                            |                                     |                   |         |
| 545'                                                    | 545'  |                                                                                                |                                            |                                     |                   |         |
| 550'                                                    | 550'  |                                                                                                |                                            |                                     |                   |         |
| 555'                                                    | 555'  |                                                                                                |                                            |                                     |                   |         |
| 560'                                                    | 560'  |                                                                                                |                                            |                                     |                   |         |
| 565'                                                    | 565'  |                                                                                                |                                            |                                     |                   |         |
| 570'                                                    | 570'  |                                                                                                |                                            |                                     |                   |         |
| 575'                                                    | 575'  |                                                                                                |                                            |                                     |                   |         |
| 580'                                                    | 580'  |                                                                                                |                                            |                                     |                   |         |
| 585'                                                    | 585'  |                                                                                                |                                            |                                     |                   |         |
| 590'                                                    | 590'  |                                                                                                |                                            |                                     |                   |         |
| 595'                                                    | 595'  |                                                                                                |                                            |                                     |                   |         |
| 600'                                                    | 600'  |                                                                                                |                                            |                                     |                   |         |
| 605'                                                    | 605'  |                                                                                                |                                            |                                     |                   |         |
| 610'                                                    | 610'  |                                                                                                |                                            |                                     |                   |         |
| 615'                                                    | 615'  |                                                                                                |                                            |                                     |                   |         |
| 620'                                                    | 620'  |                                                                                                |                                            |                                     |                   |         |
| 625'                                                    | 625'  |                                                                                                |                                            |                                     |                   |         |
| 630'                                                    | 630'  |                                                                                                |                                            |                                     |                   |         |
| 635'                                                    | 635'  |                                                                                                |                                            |                                     |                   |         |
| 640'                                                    | 640'  |                                                                                                |                                            |                                     |                   |         |
| 645'                                                    | 645'  |                                                                                                |                                            |                                     |                   |         |
| 650'                                                    | 650'  |                                                                                                |                                            |                                     |                   |         |
| 655'                                                    | 655'  |                                                                                                |                                            |                                     |                   |         |
| 660'                                                    | 660'  |                                                                                                |                                            |                                     |                   |         |
| 665'                                                    | 665'  |                                                                                                |                                            |                                     |                   |         |
| 670'                                                    | 670'  |                                                                                                |                                            |                                     |                   |         |
| 675'                                                    | 675'  |                                                                                                |                                            |                                     |                   |         |
| 680'                                                    | 680'  |                                                                                                |                                            |                                     |                   |         |
| 685'                                                    | 685'  |                                                                                                |                                            |                                     |                   |         |
| 690'                                                    | 690'  |                                                                                                |                                            |                                     |                   |         |
| 695'                                                    | 695'  |                                                                                                |                                            |                                     |                   |         |
| 700'                                                    | 700'  |                                                                                                |                                            |                                     |                   |         |
| 705'                                                    | 705'  |                                                                                                |                                            |                                     |                   |         |
| 710'                                                    | 710'  |                                                                                                |                                            |                                     |                   |         |
| 715'                                                    | 715'  |                                                                                                |                                            |                                     |                   |         |
| 720'                                                    | 720'  |                                                                                                |                                            |                                     |                   |         |
| 725'                                                    | 725'  |                                                                                                |                                            |                                     |                   |         |
| 730'                                                    | 730'  |                                                                                                |                                            |                                     |                   |         |
| 735'                                                    | 735'  |                                                                                                |                                            |                                     |                   |         |
| 740'                                                    | 740'  |                                                                                                |                                            |                                     |                   |         |
| 745'                                                    | 745'  |                                                                                                |                                            |                                     |                   |         |
| 750'                                                    | 750'  |                                                                                                |                                            |                                     |                   |         |
| 755'                                                    | 755'  |                                                                                                |                                            |                                     |                   |         |
| 760'                                                    | 760'  |                                                                                                |                                            |                                     |                   |         |
| 765'                                                    | 765'  |                                                                                                |                                            |                                     |                   |         |
| 770'                                                    | 770'  |                                                                                                |                                            |                                     |                   |         |
| 775'                                                    | 775'  |                                                                                                |                                            |                                     |                   |         |
| 780'                                                    | 780'  |                                                                                                |                                            |                                     |                   |         |
| 785'                                                    | 785'  |                                                                                                |                                            |                                     |                   |         |
| 790'                                                    | 790'  |                                                                                                |                                            |                                     |                   |         |
| 795'                                                    | 795'  |                                                                                                |                                            |                                     |                   |         |
| 800'                                                    | 800'  |                                                                                                |                                            |                                     |                   |         |
| 805'                                                    | 805'  |                                                                                                |                                            |                                     |                   |         |
| 810'                                                    | 810'  |                                                                                                |                                            |                                     |                   |         |
| 815'                                                    | 815'  |                                                                                                |                                            |                                     |                   |         |
| 820'                                                    | 820'  |                                                                                                |                                            |                                     |                   |         |
| 825'                                                    | 825'  |                                                                                                |                                            |                                     |                   |         |
| 830'                                                    | 830'  |                                                                                                |                                            |                                     |                   |         |
| 835'                                                    | 835'  |                                                                                                |                                            |                                     |                   |         |
| 840'                                                    | 840'  |                                                                                                |                                            |                                     |                   |         |
| 845'                                                    | 845'  |                                                                                                |                                            |                                     |                   |         |
| 850'                                                    | 850'  |                                                                                                |                                            |                                     |                   |         |
| 855'                                                    | 855'  |                                                                                                |                                            |                                     |                   |         |
| 860'                                                    | 860'  |                                                                                                |                                            |                                     |                   |         |
| 865'                                                    | 865'  |                                                                                                |                                            |                                     |                   |         |
| 870'                                                    | 870'  |                                                                                                |                                            |                                     |                   |         |
| 875'                                                    | 875'  |                                                                                                |                                            |                                     |                   |         |
| 880'                                                    | 880'  |                                                                                                |                                            |                                     |                   |         |
| 885'                                                    | 885'  |                                                                                                |                                            |                                     |                   |         |
| 890'                                                    | 890'  |                                                                                                |                                            |                                     |                   |         |
| 895'                                                    | 895'  |                                                                                                |                                            |                                     |                   |         |
| 900'                                                    | 900'  |                                                                                                |                                            |                                     |                   |         |
| 905'                                                    | 905'  |                                                                                                |                                            |                                     |                   |         |
| 910'                                                    | 910'  |                                                                                                |                                            |                                     |                   |         |
| 915'                                                    | 915'  |                                                                                                |                                            |                                     |                   |         |
| 920'                                                    | 920'  |                                                                                                |                                            |                                     |                   |         |
| 925'                                                    | 925'  |                                                                                                |                                            |                                     |                   |         |
| 930'                                                    | 930'  |                                                                                                |                                            |                                     |                   |         |
| 935'                                                    | 935'  |                                                                                                |                                            |                                     |                   |         |
| 940'                                                    | 940'  |                                                                                                |                                            |                                     |                   |         |
| 945'                                                    | 945'  |                                                                                                |                                            |                                     |                   |         |
| 950'                                                    | 950'  |                                                                                                |                                            |                                     |                   |         |
| 955'                                                    | 955'  |                                                                                                |                                            |                                     |                   |         |
| 960'                                                    | 960'  |                                                                                                |                                            |                                     |                   |         |
| 965'                                                    | 965'  |                                                                                                |                                            |                                     |                   |         |
| 970'                                                    | 970'  |                                                                                                |                                            |                                     |                   |         |
| 975'                                                    | 975'  |                                                                                                |                                            |                                     |                   |         |
| 980'                                                    | 980'  |                                                                                                |                                            |                                     |                   |         |
| 985'                                                    | 985'  |                                                                                                |                                            |                                     |                   |         |
| 990'                                                    | 990'  |                                                                                                |                                            |                                     |                   |         |
| 995'                                                    | 995'  |                                                                                                |                                            |                                     |                   |         |
| 1000'                                                   | 1000' |                                                                                                |                                            |                                     |                   |         |

FIGURE NO. CS-9

| DRILLING LOG                                                                                                                  |       | DIVISION              | INSTALLATION                                                                      | SHEET 2 OF 2 SHEETS                                                                |                   |                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------|
| 1. PROJECT: <u>King's Island Training Basin</u>                                                                               |       | <u>South Atlantic</u> | <u>Savannah River</u>                                                             |                                                                                    |                   |                                                                                                 |
| 2. LOCATION (Coordinates or Station): <u>D-17</u>                                                                             |       |                       | 10. SIZE AND TYPE OF BIT: <u>1 3/8" ID Split Spoon</u>                            |                                                                                    |                   |                                                                                                 |
| 3. HQ AGENCY: <u>Naval District</u>                                                                                           |       |                       | 11. DATUM FOR ELEVATION SHOWN (FIM or MLL): <u>MLW</u>                            |                                                                                    |                   |                                                                                                 |
| 4. HOLE NO. (As shown on drawing and file number): <u>CS-9</u>                                                                |       |                       | 12. MANUFACTURER'S DESIGNATION OF DRILL: <u>2 1/2" E-1-1-1</u>                    |                                                                                    |                   |                                                                                                 |
| 5. NAME OF DRILLER: <u>M. S. Donald</u>                                                                                       |       |                       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: <u>6</u>                               | DISTURBED <input checked="" type="checkbox"/> UNDISTURBED <input type="checkbox"/> |                   |                                                                                                 |
| 6. DIRECTION OF HOLE: <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED <u>1</u> DEG. FROM VERT. |       |                       | 14. TOTAL NUMBER CORE BOXES: <u>0</u>                                             |                                                                                    |                   |                                                                                                 |
| 7. THICKNESS OF OVERBURDEN:                                                                                                   |       |                       | 15. REMARKS ON GROUND WATER: <u>Bottom 1st Pipe</u>                               |                                                                                    |                   |                                                                                                 |
| 8. DEPTH DRILLED INTO ROCK:                                                                                                   |       |                       | 16. DATE HOLE STARTED: <u>2 May 77</u> COMPLETED: <u>2 May 77</u>                 |                                                                                    |                   |                                                                                                 |
| 9. TOTAL DEPTH OF HOLE: <u>45.4'</u>                                                                                          |       |                       | 17. ELEVATION TOP OF HOLE:                                                        |                                                                                    |                   |                                                                                                 |
|                                                                                                                               |       |                       | 18. TOTAL CORE RECOVERY FOR BORING: <u>1</u>                                      |                                                                                    |                   |                                                                                                 |
|                                                                                                                               |       |                       | 19. SIGNATURE OF INSPECTOR: <u>SP-1 M. S. Donald</u>                              |                                                                                    |                   |                                                                                                 |
| ELEVATION                                                                                                                     | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY                                                                    | BOX OR SAMPLE NO. | REMARKS (Drilling tool, water loss, depth of weathering, etc., if significant)                  |
| 20.6                                                                                                                          |       |                       |                                                                                   |                                                                                    | 3                 |                                                                                                 |
| 35                                                                                                                            |       |                       | SM-Gray silty fine sand micaceous 30.4-34.9'                                      |                                                                                    | 4                 | Advanced N.K. casing to 35.7' - 38.9'                                                           |
| 40                                                                                                                            |       |                       | Gray silty fine sand 34.9-37.9' Green silty fine sand micaceous 37.9-45.4'        |                                                                                    | 5                 |                                                                                                 |
| 45                                                                                                                            |       |                       | Soils field classified in accordance with the Unified Soil Classification System. |                                                                                    | 6                 | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID split spoon w/140 lb. hammer falling 30". |





| DRILLING LOG                                         |  | DIVISION                                                                       | INSTALLATION                                      | HOLE NO. | SHEET         |
|------------------------------------------------------|--|--------------------------------------------------------------------------------|---------------------------------------------------|----------|---------------|
| PROJECT                                              |  | South Atlantic                                                                 | UNCLASSIFIED                                      | 2000     | 2 OF 2 SHEETS |
| LOCATION (Coordinates or Station)                    |  | Kings Island Turning Basin                                                     | 10. SIZE AND TYPE OF BIT 1 3/4" ID splitspoon     |          |               |
| DRILLING AGENCY                                      |  | See Plan                                                                       | 11. DATUM FOR ELEVATION KNOWN (TBM or BENCH MARK) |          |               |
| NAME OF DRILLER                                      |  | Savannah District                                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL           |          |               |
| HOLE NO. (As shown on drawing title and file number) |  | CS-10                                                                          | 314 Falling                                       |          |               |
| NAME OF DRILLER                                      |  | MC Donald                                                                      | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN         |          |               |
| DIRECTION OF HOLE                                    |  | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED | 14. TOTAL NUMBER CORE BOXES                       |          |               |
| THICKNESS OF OVERBURDEN                              |  |                                                                                | 15. ELEVATION GROUND WATER BORING IN "Pipe"       |          |               |
| DEPTH DRILLED INTO ROCK                              |  |                                                                                | 16. DATE HOLE STARTED COMPLETED                   |          |               |
| TOTAL DEPTH OF HOLE                                  |  | 45.7'                                                                          | 3 May 73 7 May 73                                 |          |               |
|                                                      |  |                                                                                | 17. ELEVATION TOP OF HOLE                         |          |               |
|                                                      |  |                                                                                | 18. TOTAL CORE RECOVERY FOR BORING                |          |               |
|                                                      |  |                                                                                | 19. SIGNATURE OF INSPECTOR                        |          |               |
|                                                      |  |                                                                                | Edward Michael                                    |          |               |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS                                                                                       |
|-----------|-------|--------|-----------------------------------------------------------------------------------|-----------------|-------------------|-----------------------------------------------------------------------------------------------|
| 39'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 35'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 32'       |       |        | SM-Gray & Green                                                                   |                 |                   |                                                                                               |
| 30'       |       |        | Silty fine sand                                                                   |                 |                   |                                                                                               |
| 28'       |       |        | Micaceous                                                                         |                 |                   |                                                                                               |
| 25'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 22'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 19'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 16'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 13'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 10'       |       |        |                                                                                   |                 |                   |                                                                                               |
| 7'        |       |        |                                                                                   |                 |                   |                                                                                               |
| 4'        |       |        |                                                                                   |                 |                   |                                                                                               |
| 1'        |       |        |                                                                                   |                 |                   |                                                                                               |
| 0'        |       |        |                                                                                   |                 |                   |                                                                                               |
|           |       |        | Soils field classified in accordance with the Unified Soil Classification System. |                 |                   | BLWNS FEB FOOT:<br>Number required to drive 1 1/2" ID splitspoon w/140 lb. hammer falling 30" |

# SAVANNAH HARBOR BORING LOGS

From Station 97+750

To

Station 103+000



| DRILLING LOG                                                                   |  | DIV | INSTALLATION                                         | SHEET         |
|--------------------------------------------------------------------------------|--|-----|------------------------------------------------------|---------------|
| South Atlantic                                                                 |  |     | Savannah, Ga.                                        | 1 OF 2 SHEETS |
| 1. PROJECT Savannah Harbor Widening and Deepening, Phase 2                     |  |     | 10. SIZE AND TYPE OF PIT 1-3/8" Split Spoon, R       |               |
| 2. LOCATION (Continuation of Station)                                          |  |     | 11. DATUM FOR ELEVATION SHOWN (Tide or MSL) Core Bit |               |
| See Plan                                                                       |  |     | MLJ                                                  |               |
| 3. DRILLING AGENCY Savannah District                                           |  |     | 12. MANUFACTURER'S DESIGNATION OF DRILL              |               |
|                                                                                |  |     | Failing 314 C.D. #8                                  |               |
| 4. HOLE NO. (As shown on drawing title and file number)                        |  |     | 13. TOTAL NO. OF OVER-UNDISTURBED                    |               |
| 1                                                                              |  |     | BURDEN SAMPLES TAKEN 1 0                             |               |
| 5. NAME OF DRILLER                                                             |  |     | 14. TOTAL NUMBER CORE BOXES                          |               |
| Creemer                                                                        |  |     | 2                                                    |               |
| 6. DIRECTION OF HOLE                                                           |  |     | 15. ELEVATION GROUND WATER                           |               |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |  |     | 0.0' - Tidal                                         |               |
| DEC. FROM VERT.                                                                |  |     | 16. DATE HOLE                                        |               |
|                                                                                |  |     | 19 Mar 69                                            |               |
| 7. THICKNESS OF OVERBURDEN                                                     |  |     | 17. ELEVATION TOP OF HOLE                            |               |
|                                                                                |  |     | -14.3'                                               |               |
| 8. DEPTH DRILLED INTO ROCK                                                     |  |     | 18. TOTAL CORE RECOVERY FOR BORING                   |               |
|                                                                                |  |     | 58                                                   |               |
| 9. TOTAL DEPTH OF HOLE                                                         |  |     | 19. SIGNATURE OF INSPECTOR                           |               |
| 45.5'                                                                          |  |     | Allen Merritt, Robert L. Sleson, Geologist           |               |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                                                  | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling temp, water loss, depth of weathering, etc., if significant) |
|-----------|-------|--------|------------------------------------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| a         | b     | c      | d                                                                                                          | e               | f                 | g                                                                              |
|           |       |        | Water                                                                                                      |                 |                   | No Sample obtained of OL materials, stratum very thin                          |
|           | 5     |        |                                                                                                            |                 |                   |                                                                                |
|           | 10    |        |                                                                                                            |                 |                   |                                                                                |
|           | 15    |        | SH-Gray, very fine grained, silty sand                                                                     |                 | Jan 1             | 14.3' to 16.5' Washed out while setting casing                                 |
|           | 20    |        | ML-Greenish gray, clayey to sandy silt, moderate resistance to knife blade penetration from 18.0' to 24.5' | 100             |                   | Split spoon 16.5' to 18.0' 4" Casing set to 18.5'                              |
|           | 25    |        |                                                                                                            | 86              |                   | Pull #1, 18.0' to 19.5' Run 1.5', Rec 1.5'                                     |
|           | 30    |        | SH-Gray, silty, very fine grained sand, moderate resistance to knife blade penetration from 24.5' to 29.5' | 40              |                   | Pull #2, 19.5' to 24.5' Run 5.0', Rec 4.3' CI 0.7'                             |
|           | 35    |        |                                                                                                            |                 |                   | Pull #3, 24.5' to 29.5' Run 5.0', Rec 2.0' CI 3.0'                             |
|           | 40    |        |                                                                                                            |                 |                   |                                                                                |
|           | 45    |        |                                                                                                            |                 |                   |                                                                                |
|           | 50    |        | Continued on Sheet #2                                                                                      |                 |                   |                                                                                |

(Revised by Amendment No. 0001)

| DRILLING LOG (Cont Sheet)                               |            |             | VARIATION TOP OF HOLE<br>-14.3'                                                                         |                      | Hole No. 1             |                                                                                        |
|---------------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------------------------|----------------------|------------------------|----------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening and Deepening, Phase 2 |            |             | INSTALLATION Savannah, Ga.                                                                              |                      | SHEET 2 OF 2 SHEETS    |                                                                                        |
| ELEVATION<br>a                                          | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                       | % CORE RECOVERY<br>e | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |
|                                                         | 35         |             | SM-Tan, very fine grained, silty sand, slight resistance to knife blade penetration from 39.5' to 41.6' | 24                   | 1                      | Pull #4, 29.5' to 34.5'<br>Run 5.0', Rec 1.2'<br>Cl 3.8'                               |
|                                                         | 40         |             |                                                                                                         | 44                   |                        | Pull #5, 34.5' to 38.8'<br>Run 4.3', Rec 1.9'<br>Cl 2.4'                               |
|                                                         | 45         |             |                                                                                                         | 72                   |                        | Pull #6, 38.8' to 41.6'<br>Run 2.8', Rec 2.0'<br>Cl 0.8'                               |
|                                                         |            |             | Compaction shale, gray, sandy, moderate resistance to knife blade penetration                           | 80                   |                        | Pull #7, 41.6' to 45.5'<br>Run 3.9', Rec 3.1'<br>Cl 0.8'                               |
|                                                         |            |             | BOTTOM OF HOLE 45.5'                                                                                    |                      |                        |                                                                                        |
|                                                         |            |             | Soils field classified in accordance with the Unified Soil Classification System.                       |                      |                        | Used 150 to 250 lbs. pressure while coring.                                            |

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(Revised by Amendment No. 0001)

HOLE NO. 2

| DRILLING LOG                                                                                                              |       | DIVISION       | INSTALLATION                                                                                                                                                        |                 | SHEET 1 OF 2 SHEETS |                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT Savannah Harbor Widening and Deepening, Phase 2                                                                |       | South Atlantic | Savannah                                                                                                                                                            |                 | 2                   |                                                                                                                                  |
| 2. LOCATION (Coordinates or Station)                                                                                      |       |                | 10. SIZE AND TYPE 2 PIT 1-3/8" Splitspoon, K                                                                                                                        |                 |                     |                                                                                                                                  |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Core Bit                                                                                                                 |                 |                     |                                                                                                                                  |
| 4. HOLE NO. (As shown on drawing title and file number) 2                                                                 |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                                                                                             |                 |                     |                                                                                                                                  |
| 5. NAME OF DRILLER King                                                                                                   |       |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 1 Jar 0                                                                                                                   |                 |                     |                                                                                                                                  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. TOTAL NUMBER CORE BOXES 2                                                                                                                                       |                 |                     |                                                                                                                                  |
| 7. THICKNESS OF OVERBURDEN                                                                                                |       |                | 15. ELEVATION GROUND WATER 0.0 - Tidal                                                                                                                              |                 |                     |                                                                                                                                  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                |       |                | 16. DATE HOLE STARTED 21 Mar 69 COMPLETED 21 Mar 69                                                                                                                 |                 |                     |                                                                                                                                  |
| 9. TOTAL DEPTH OF HOLE 44.2'                                                                                              |       |                | 17. ELEVATION TOP OF HOLE -14.0'                                                                                                                                    |                 |                     |                                                                                                                                  |
|                                                                                                                           |       |                | 18. TOTAL CORE RECOVERY FOR BORING 55 %                                                                                                                             |                 |                     |                                                                                                                                  |
|                                                                                                                           |       |                | 19. SIGNATURE OF INSPECTOR Allen Merritt, Robert Siesen, Geologist                                                                                                  |                 |                     |                                                                                                                                  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                                                                           | % CORE RECOVERY | BOX OR SAMPLE NO.   | REMARKS (Drilling time, water loss, depth of washing, etc., if significant)                                                      |
|                                                                                                                           |       |                | Water, very thin layer, very soft UL-organic silt above sand                                                                                                        |                 |                     | Casing drilled to 2.0'                                                                                                           |
|                                                                                                                           | 5     |                |                                                                                                                                                                     |                 |                     | <div style="border: 2px solid black; padding: 5px; text-align: center;"> <b>RECEIVED</b><br/> <b>ONLY</b><br/> <b>FOR</b> </div> |
|                                                                                                                           | 10    |                |                                                                                                                                                                     |                 |                     |                                                                                                                                  |
|                                                                                                                           | 15    |                | SP-Tan-gray, very fine sand, slightly silty                                                                                                                         |                 | Jar 1               |                                                                                                                                  |
|                                                                                                                           | 20    |                | St-Gray, silty, very fine grained to medium grained sand, micaceous, with thin layers of SL-sandy silt moderate resistance to blade penetration from 15.5' to 19.0' | 71              |                     |                                                                                                                                  |
|                                                                                                                           | 25    |                | Siltstone, moderate resistance to knife blade penetration from 19.0' to 31.0'                                                                                       | 90              |                     | Pull #1, 15.5' to 19.0' Run 3.5', Rec 2.5' CI 1.0'<br>Pull #2, 19.0' to 24.0' Run 5.0', Rec 4.5' CI 0.5'                         |
|                                                                                                                           | 30    |                |                                                                                                                                                                     | 43              |                     | Pull #3, 24.0' to 31.0' Run 7.0', Rec 3.0' CI 4.0'<br>Soft spots recorded this run                                               |
| - Continued on Sheet 02 -                                                                                                 |       |                |                                                                                                                                                                     |                 |                     |                                                                                                                                  |

(Revised by Amendment No. 0001)

| DRILLING LOG (Cont Sheet)                                  |            | ELEVATION TOP OF HOLE<br>-14.0' |                                                                                                                                                                                                                                                                                         | Hole No. 2                     |                              |                                                                                           |
|------------------------------------------------------------|------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor<br>Widening and Deepening, Phase 2 |            | INSTALLATION<br>Savannah, Ga.   |                                                                                                                                                                                                                                                                                         | SHEET<br>OF 2 SHEETS           |                              |                                                                                           |
| ELEVATION<br>a                                             | DEPTH<br>b | LEGEND<br>c                     | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                                                                                                                                                       | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                                            |            |                                 | Siltstone                                                                                                                                                                                                                                                                               |                                |                              |                                                                                           |
|                                                            | 35         |                                 | SH-Gray, very fine grained,<br>slightly silty sand, very<br>slight resistance to knife<br>blade penetration from<br>31.0' to 36.0', SH sand<br>and ML sandy silt with<br>generally slight and<br>spotty moderately resist-<br>ance to knife blade<br>penetration from 36.0' to<br>46.2' | 60                             |                              | Pull #4, 31.0' to 36.0'<br>Run 5.0', Rec 3.0'<br>CI 2.0'                                  |
|                                                            | 40         |                                 |                                                                                                                                                                                                                                                                                         | 32                             |                              | Pull #5, 36.0' to 38.5'<br>Run 2.5', Rec 1.7'<br>CI 0.8'                                  |
|                                                            |            |                                 |                                                                                                                                                                                                                                                                                         | 68                             |                              | Pull #6, 38.5' to 41.0'<br>Run 2.5', Rec 1.7'<br>CI 0.8'                                  |
|                                                            | 45         |                                 | Cone recovery less than 10%.<br>Driller reported material as<br>soft while coring.                                                                                                                                                                                                      | 8                              |                              | Pull #7, 41.0' to 46.2'<br>Run 5.2', Rec 0.4'<br>CI 4.8'                                  |
|                                                            |            |                                 | BOTTOM OF HOLE 46.2'                                                                                                                                                                                                                                                                    |                                | 2                            |                                                                                           |
|                                                            |            |                                 | Soils field classified in<br>accordance with the Unified<br>Soil Classification System.                                                                                                                                                                                                 |                                |                              |                                                                                           |

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(Revised by Amendment No. 0001)

H&amp;A No. 3

| South Atlantic                                                                                                         |             |              | Savannah, GA.                                                                                                                                                                        |                          | SHEET 1<br>OF 2 SHEET         |                                                                                            |
|------------------------------------------------------------------------------------------------------------------------|-------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------|--------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor<br>Widening and Deepening, Phase 2                                                             |             |              | 10. SIZE AND TYPE OF PIT 1-3/8" Spitspoon/R Core                                                                                                                                     |                          |                               |                                                                                            |
| LOCATION (Coordinates or Station)<br>See Plan                                                                          |             |              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) BIC                                                                                                                                       |                          |                               |                                                                                            |
| 3. DRILLING AGENCY<br>Savannah District                                                                                |             |              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falline 314 C.D. #8                                                                                                                       |                          |                               |                                                                                            |
| 4. HOLE NO. (As shown on drawing title)<br>and file number) 3                                                          |             |              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                                                                                                       |                          |                               |                                                                                            |
| 5. NAME OF DRILLER<br>Creamer                                                                                          |             |              | 14. TOTAL NUMBER CORE BOXES 2                                                                                                                                                        |                          |                               |                                                                                            |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT. |             |              | 15. ELEVATION GROUND WATER 0.0 - Tidal                                                                                                                                               |                          |                               |                                                                                            |
| 7. THICKNESS OF OVERBURDEN                                                                                             |             |              | 16. DATE HOLE STARTED COMPLETED<br>24 Mar 69 24 Mar 69                                                                                                                               |                          |                               |                                                                                            |
| 8. DEPTH DRILLED INTO ROCK                                                                                             |             |              | 17. ELEVATION TOP OF HOLE -13.5'                                                                                                                                                     |                          |                               |                                                                                            |
| 9. TOTAL DEPTH OF HOLE 46.6'                                                                                           |             |              | 18. TOTAL CORE RECOVERY FOR BORING 60 %                                                                                                                                              |                          |                               |                                                                                            |
|                                                                                                                        |             |              | 19. SIGNATURE OF INSPECTOR<br>Allen Merritt, Robert L. Siesen, Geologist                                                                                                             |                          |                               |                                                                                            |
| ELEVATION<br>e.                                                                                                        | DEPTH<br>b. | LEGEND<br>c. | CLASSIFICATION OF MATERIALS<br>(Description)<br>d.                                                                                                                                   | % CORE<br>RECOVERY<br>e. | BOX OR<br>SAMPLE<br>NO.<br>f. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g. |
|                                                                                                                        |             |              | Water                                                                                                                                                                                |                          |                               |                                                                                            |
|                                                                                                                        |             |              | OL-Very thin soft layer<br>organic silt above sand                                                                                                                                   |                          |                               |                                                                                            |
|                                                                                                                        | 5           |              |                                                                                                                                                                                      |                          |                               |                                                                                            |
|                                                                                                                        | 10          |              |                                                                                                                                                                                      |                          |                               |                                                                                            |
| -13.5'                                                                                                                 |             |              |                                                                                                                                                                                      |                          |                               |                                                                                            |
|                                                                                                                        | 15          |              | SM-Tan, gray, silty, fine<br>grained sand                                                                                                                                            |                          | Jar 1                         | Spitspoon from 13.5' to<br>19.5'                                                           |
|                                                                                                                        | 20          |              | Fine grained to medium grained,<br>slightly clayey, slight to<br>moderate resistance to knife<br>penetration from 19.5' to 24.5'                                                     | 50                       |                               | Used from 150 to 200 lbs<br>pressure to core.                                              |
|                                                                                                                        | 25          |              | SM-Tan to gray, slightly<br>silty, very fine grained<br>sand with few thin layers<br>of SM sand, generally<br>slight resistance to<br>knife blade penetration<br>from 24.5' to 37.6' | 68                       |                               | Pull #1, 19.5' to 24.5'<br>Run 5.0', Rec 4.0'<br>CI 1.0'                                   |
|                                                                                                                        | 30          |              |                                                                                                                                                                                      |                          |                               | Pull #2, 24.5' to 37.1'<br>Run 4.6', Rec 4.5'<br>CI 1.1'                                   |
| Continued on Sheet #2                                                                                                  |             |              |                                                                                                                                                                                      |                          |                               |                                                                                            |

(Revised by Amendment No. 0001)

| DRILLING LOG (Cont Sheet)                                  |            |             | ELEVATION TOP OF HOLE<br>-13.5'                                                                                                                                     |                         | Hole No. 3                   |                                                                                           |
|------------------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor<br>Widening and Deepening, Phase 2 |            |             | INSTALLATION Savannah, Ga.                                                                                                                                          |                         | SHEET 2<br>OF 2 SHEETS       |                                                                                           |
| ELEVATION<br>a                                             | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                                   | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                                            |            |             | SH-Tan to gray, slightly<br>silty, very fine grained<br>sand                                                                                                        |                         | 1                            |                                                                                           |
|                                                            | 35         |             |                                                                                                                                                                     | 52                      |                              | Pull #3, 31.1' to 35.3'<br>Run 4.2', Rec 2.2'<br>Cl 2.0'                                  |
|                                                            |            |             |                                                                                                                                                                     | 43                      |                              | Pull #4, 35.3' to 37.6'<br>Run 2.3', Rec 1.0'<br>Cl 1.3'                                  |
| -37.6'                                                     | 40         |             | Compaction shale, gray; very<br>fine grained, silt and sand<br>with layers of CL-sandy clay,<br>moderate to fairly high<br>resistance to knife blade<br>penetration | 49                      |                              | Pull #5, 37.6' to 46.4'<br>Run 8.8', Rec 4.3'<br>Cl 4.5'                                  |
|                                                            | 45         |             |                                                                                                                                                                     |                         |                              |                                                                                           |
| -46.4                                                      |            |             | BOTTOM OF HOLE 46.4'                                                                                                                                                |                         |                              |                                                                                           |
|                                                            |            |             | Soils field classified in<br>accordance with the Unified<br>Soils Classification System.                                                                            |                         |                              |                                                                                           |

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| DRILLING LOG                                                                                |       | DIVISION                                                                                             |                                           | INSTALLATION                                                                                   |                   | Hole No. <u>SH-12</u>                                                                      |  |
|---------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------|--|
| 1. PROJECT <u>SAYAMPAH HARBOR</u>                                                           |       | <u>SOUTH ATLANTIC</u>                                                                                |                                           | <u>SAYAMPAH R. W. CO.</u>                                                                      |                   | SHEET 1 OF 2 SHEETS                                                                        |  |
| 2. LOCATION (Geographic or Station)                                                         |       | <u>KING ISLAND TURNING BASIN</u>                                                                     |                                           | 10. SIZE AND TYPE OF BIT <u>1 1/4" ID SPLITSPON</u>                                            |                   | 11. DAYTON FOR ELEVATION SHOWN ( <u>MEASURED</u> )                                         |  |
| 3. PLAN LING AGENCY                                                                         |       | <u>TE PLAN</u>                                                                                       |                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL <u>MLW</u>                                             |                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN <u>5</u> DISTURBED <u>0</u> UNDISTURBED <u>0</u> |  |
| 4. HOLE NO. (As shown on drawing title) and file number                                     |       | <u>SH-12</u>                                                                                         |                                           | 14. TOTAL NUMBER CORE BOXES                                                                    |                   | 15. ELEVATION GROUND WATER                                                                 |  |
| 5. NAME OF DRILLER                                                                          |       | <u>J. W. SCOTT</u>                                                                                   |                                           | 16. DATE HOLE                                                                                  |                   | STARTED <u>16 FEB. 1978</u> COMPLETED <u>16 FEB. 1978</u>                                  |  |
| 6. DIRECTION OF HOLE                                                                        |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                           | 17. ELEVATION TOP OF HOLE <u>0.0 MLW</u>                                                       |                   | 18. TOTAL CORE RECOVERY FOR BORING <u>5</u>                                                |  |
| 7. THICKNESS OF OVERBURDEN <u>55.0'</u>                                                     |       | 8. DEPTH DRILLED INTO ROCK <u>0.0'</u>                                                               |                                           | 9. TOTAL DEPTH OF HOLE <u>-55.0' MLW</u>                                                       |                   | 19. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>                                       |  |
| ELEVATION                                                                                   | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY                                                                                | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)             |  |
| 0.0 MIN                                                                                     | 0'    |                                                                                                      | WATER                                     |                                                                                                |                   |                                                                                            |  |
| -2.5                                                                                        |       |                                                                                                      | BOTTOM OF RIVER -2.5' MLW                 |                                                                                                | 1A                | BLOWS                                                                                      |  |
|                                                                                             | 5'    |                                                                                                      | MH - GREENISH GRAY SOFT CLAYBY Silt       |                                                                                                | 1                 | NOTE: HEIGHT OF HAMMER PUNCHED RODS WITH SPLITSPON FROM -2.5' TO -17.5'                    |  |
|                                                                                             | 10'   |                                                                                                      |                                           |                                                                                                |                   | 0                                                                                          |  |
|                                                                                             | 15'   |                                                                                                      |                                           |                                                                                                |                   | 0                                                                                          |  |
|                                                                                             | 20'   |                                                                                                      | SP. TAN POORELY GRADED SAND               |                                                                                                | 2                 | 5                                                                                          |  |
|                                                                                             | 25'   |                                                                                                      |                                           |                                                                                                |                   | 7                                                                                          |  |
|                                                                                             | 30'   |                                                                                                      |                                           |                                                                                                |                   | 10                                                                                         |  |
|                                                                                             |       |                                                                                                      |                                           |                                                                                                |                   | 10                                                                                         |  |
|                                                                                             |       |                                                                                                      |                                           |                                                                                                |                   | 20                                                                                         |  |
|                                                                                             |       |                                                                                                      |                                           |                                                                                                |                   | 15                                                                                         |  |
|                                                                                             |       |                                                                                                      |                                           |                                                                                                |                   | 17                                                                                         |  |
|                                                                                             |       |                                                                                                      |                                           |                                                                                                |                   | 14                                                                                         |  |
| -30.0                                                                                       | 30'   |                                                                                                      | CONTINUED ON SHEET 2                      |                                                                                                |                   |                                                                                            |  |
| NOTE: Soils field classification in accordance with the Unified Soil Classification System. |       |                                                                                                      |                                           | BLOWS PER FOOT:<br>Number required to drive 1 1/4" ID split spoon w/140 lb hammer falling 30". |                   |                                                                                            |  |

| DRILLING LOG (Cont Sheet)       |       |                                  | Hole No. <i>SN-12</i>                                                     |                  |                   |                                                                                   |
|---------------------------------|-------|----------------------------------|---------------------------------------------------------------------------|------------------|-------------------|-----------------------------------------------------------------------------------|
| PROJECT <i>Savannah Harbor</i>  |       | INSTALLATION <i>O.D. 10.0 IN</i> |                                                                           |                  |                   |                                                                                   |
| HOLE ISLAND <i>THAMES BASIN</i> |       | SEVANIAN RIVER, GA.              |                                                                           |                  |                   |                                                                                   |
| ELEVATION                       | DEPTH | LEGEND                           | CLASSIFICATION OF MATERIALS<br>(If known)                                 | % CORE RECOVERED | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |
| a                               | b     | c                                | d                                                                         | e                | f                 | g                                                                                 |
|                                 | 30'   |                                  |                                                                           |                  | 3                 |                                                                                   |
|                                 |       |                                  | SP. TAN POORLY GRADED SAND                                                |                  |                   | 30                                                                                |
|                                 |       |                                  |                                                                           |                  |                   | 36                                                                                |
|                                 |       |                                  |                                                                           |                  |                   | 40                                                                                |
|                                 | 35'   |                                  |                                                                           |                  |                   | 58                                                                                |
|                                 |       |                                  |                                                                           |                  |                   | 61                                                                                |
|                                 |       |                                  | WITH SOME GRAVEL                                                          |                  |                   | 67                                                                                |
| <i>38.5</i>                     |       |                                  |                                                                           |                  | 4                 | 40                                                                                |
|                                 | 40'   |                                  | MH. GREEN HARD CLAYEY SILT WITH SILTY SAND LAYERS AND TRACES OF FINE MICA |                  |                   | 58                                                                                |
|                                 |       |                                  |                                                                           |                  |                   | 66                                                                                |
|                                 | 45'   |                                  |                                                                           |                  |                   | 81                                                                                |
|                                 |       |                                  |                                                                           |                  |                   | 90                                                                                |
|                                 |       |                                  |                                                                           |                  | 5                 | 79                                                                                |
|                                 | 50'   |                                  |                                                                           |                  |                   | 100                                                                               |
|                                 |       |                                  |                                                                           |                  |                   | 83                                                                                |
|                                 |       |                                  |                                                                           |                  |                   | 100/0.9                                                                           |
|                                 |       |                                  |                                                                           |                  |                   | 94                                                                                |
| <i>-35.0</i>                    | 55'   |                                  | BOTTOM OF HOLE - 55.0' MDW                                                |                  |                   | 90                                                                                |



| DRILLING LOG                                                                                                                 |             | DIVISION                     | INSTALLATION                                                                            | Hole No.                | SR-14                          |                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------|-----------------------------------------------------------------------------------------|-------------------------|--------------------------------|-------------------------------------------------------------------------------------------------|
| South Atlantic                                                                                                               |             | Savannah River, Savannah, GA |                                                                                         | SHEET 1 OF 3 SHEETS     |                                |                                                                                                 |
| 1. PROJECT Enlargement of Kings Island Turning Basin                                                                         |             |                              | 10. SIZE AND TYPE OF BIT 1 3/8" Auger, 1 3/8" ID                                        |                         |                                |                                                                                                 |
| 2. LOCATION (Comma or Station)<br>N 778.045 E 818.310                                                                        |             |                              | 11. DATUM FOR ELEVATION SHOWS ITEM - MLW splitspoon                                     |                         |                                |                                                                                                 |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME-75                                       |                         |                                |                                                                                                 |
| 4. HOLE NO. (As shown on drawing title)<br>and file number                                                                   |             |                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                          |                         |                                |                                                                                                 |
| SH-14                                                                                                                        |             |                              | DISTURBED 17 UNDISTURBED 0                                                              |                         |                                |                                                                                                 |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |             |                              | 14. TOTAL NUMBER CORE BOXES                                                             |                         |                                |                                                                                                 |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                              | 15. ELEVATION GROUND WATER 15.1'                                                        |                         |                                |                                                                                                 |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |             |                              | 16. DATE HOLE STARTED 16 May 78 COMPLETED 18 May 78                                     |                         |                                |                                                                                                 |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                              | 17. ELEVATION TOP OF HOLE -20.5' MLW 25.0                                               |                         |                                |                                                                                                 |
| 9. TOTAL DEPTH OF HOLE 81.0'                                                                                                 |             |                              | 18. TOTAL CORE RECOVERY FOR BORING                                                      |                         |                                |                                                                                                 |
|                                                                                                                              |             |                              | 19. SIGNATURE OF INSPECTOR<br>DAWN MARIE HARTLEY                                        |                         |                                |                                                                                                 |
| ELEVATION<br>+                                                                                                               | DEPTH<br>0+ | LEGEND                       | CLASSIFICATION OF MATERIALS<br>(Description)                                            | 1 CORE<br>RECOVERY<br>% | BOX OF<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water level, depth of<br>penetration, etc., if significant)<br>BLOWS |
| 25.0'                                                                                                                        |             |                              | SM - Orange-brown, fine to medium grained, silty sand, moist, w/mica flakes             |                         | 1.                             | W. T. 18.5'<br>Date 16 May 78<br>Depth to water during drilling.                                |
|                                                                                                                              | 5           |                              |                                                                                         |                         | 2                              | W. T. 9.9'<br>Water table reading 24 hrs. after hole completed.                                 |
|                                                                                                                              | 10          |                              | W/thin, tan, clay layers                                                                |                         |                                |                                                                                                 |
|                                                                                                                              | 15          |                              |                                                                                         |                         | 3                              |                                                                                                 |
|                                                                                                                              |             |                              | Gray fine grained w/a little clay, damp                                                 |                         | 4                              |                                                                                                 |
|                                                                                                                              | 20          |                              | Orange-tan, fine to medium grained, wet                                                 |                         |                                |                                                                                                 |
| 5.0'                                                                                                                         |             |                              | SC - Gray, fine grained, clayey sand, saturated                                         |                         | 5                              |                                                                                                 |
|                                                                                                                              | 25          |                              |                                                                                         |                         |                                |                                                                                                 |
|                                                                                                                              |             |                              | W/ occasional clay layers                                                               |                         | 6                              |                                                                                                 |
|                                                                                                                              | 30          |                              |                                                                                         |                         |                                |                                                                                                 |
|                                                                                                                              |             |                              | Continued on sheet 2                                                                    |                         |                                |                                                                                                 |
|                                                                                                                              |             |                              | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                         |                                |                                                                                                 |
|                                                                                                                              |             |                              |                                                                                         |                         |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30"  |

| BILLING LOG (Cont Sheet)            |                                                                            | Hole No. SH-14                                     |                                                                                   |
|-------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------|
| INSTALLATION                        |                                                                            | SHEET 2 OF 3 SHEETS                                |                                                                                   |
| enlargement of Kings Island Turning |                                                                            | Savannah River Savannah, GA                        |                                                                                   |
| DEPTH                               | LEGEND                                                                     | Basin CLASSIFICATION OF MATERIALS<br>(Description) | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |
| 30                                  |                                                                            |                                                    |                                                                                   |
| 6.0'                                | SC - Gray, fine grained clayey sand, w/occasional clay layers saturated    | 77                                                 | 6                                                                                 |
|                                     | SM - Gray-brown, medium to fine grained silty sand, saturated              |                                                    | 18                                                                                |
| 35                                  |                                                                            |                                                    | 25                                                                                |
|                                     | Fine to medium grained w/fine gravel and gray clay layers                  | 8                                                  | 25                                                                                |
|                                     |                                                                            |                                                    | 12                                                                                |
| 40                                  |                                                                            |                                                    | 18                                                                                |
|                                     | Gray, fine grained, no gravel                                              |                                                    | 24                                                                                |
|                                     |                                                                            |                                                    | 28                                                                                |
|                                     |                                                                            |                                                    | 30                                                                                |
| 45                                  |                                                                            |                                                    | 22                                                                                |
|                                     | No clay, w/a fine gravel layer                                             | 9                                                  | 50                                                                                |
|                                     |                                                                            |                                                    | 33                                                                                |
| 50                                  |                                                                            |                                                    | 40                                                                                |
|                                     | Fine to medium grained                                                     | 10                                                 | 26                                                                                |
|                                     |                                                                            |                                                    | 26                                                                                |
|                                     | Traces of decomposing organic matter                                       |                                                    | 26                                                                                |
| 55                                  |                                                                            | 11                                                 | 40                                                                                |
| 30.5'                               | SC - Gray, fine grained, clayey sand                                       | 12                                                 | 39                                                                                |
| 32.5'                               | SM - Gray, fine to medium grained silty sand                               |                                                    | 45                                                                                |
| 60                                  |                                                                            |                                                    | 58                                                                                |
|                                     | w/fine gravel                                                              | 13                                                 | 50                                                                                |
|                                     |                                                                            |                                                    | 35                                                                                |
| 65                                  |                                                                            |                                                    | 51                                                                                |
|                                     | Coarse grained w/gray clay patches                                         |                                                    | 30                                                                                |
|                                     |                                                                            |                                                    | 23                                                                                |
| 70                                  | No clay                                                                    | 14                                                 | 34                                                                                |
| 4.0'                                | MM - Dark gray-green, plastic silt, w/ fine mica flakes & some fine gravel |                                                    |                                                                                   |

| DRILLING LOG (Cont Sheet)           |       | V TOP OF HOLE<br>75.0'                       |                                                                                                                           | Hole No. SH-14               |                                   |                                                                                                |
|-------------------------------------|-------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------|
| enlargement of Kings Island Turning |       | INSTALLATION<br>Savannah River, Savannah, GA |                                                                                                                           | SHEET 3<br>OF 3 SHEETS       |                                   |                                                                                                |
| ELEVATION<br>s                      | DEPTH | LEGEND<br>c                                  | Basin CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                   | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f<br>g | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>h<br>i |
|                                     | 79.   |                                              | MH - Dark gray-green plastic<br>silt w/patches of fine grain<br>gray sand throughout, w/fine<br>mica flakes but no gravel |                              | 15                                | 25                                                                                             |
|                                     |       |                                              |                                                                                                                           |                              |                                   | 27                                                                                             |
|                                     |       |                                              |                                                                                                                           |                              |                                   | 70                                                                                             |
|                                     | 75    |                                              |                                                                                                                           |                              |                                   | 27                                                                                             |
|                                     |       |                                              |                                                                                                                           |                              | 16                                | 65                                                                                             |
|                                     |       |                                              |                                                                                                                           |                              |                                   | 70                                                                                             |
|                                     | 80    |                                              | Approximately 50% sand                                                                                                    |                              | 17                                | 27                                                                                             |
| -56.0                               |       |                                              | Bottom of hole 81.0'                                                                                                      |                              |                                   | 90                                                                                             |
|                                     | 85    |                                              |                                                                                                                           |                              |                                   |                                                                                                |

Hole No. SH-17

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic                        |                                                                                                                                   | INSTALLATION<br>Savannah River, Savannah, GA   |                                | SHEET 1<br>OF 3 SHEETS                                                               |    |
|------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|----|
| 1. PROJECT<br>Enlargement of Kings Island<br>Turning Basin                                                                   |             | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Split spoon |                                                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)     |                                | 4" Spiral<br>7" Fish tail                                                            |    |
| 2. DRILLING AGENCY<br>Savannah District                                                                                      |             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75 |                                                                                                                                   | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN |                                | DISTURBED<br>15                                                                      |    |
| 3. HOLE NO. (As shown on drawing title<br>and file number)                                                                   |             | SH-17                                             |                                                                                                                                   | 14. TOTAL NUMBER CORE BOXES                    |                                | UNDISTURBED<br>0                                                                     |    |
| 4. NAME OF DRILLER<br>T. W. Scott                                                                                            |             | 15. ELEVATION GROUND WATER                        |                                                                                                                                   | 16. DATE HOLE                                  |                                | STARTED<br>18 May 78                                                                 |    |
| 5. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             | 17. ELEVATION TOP OF HOLE<br>25.0' MHW            |                                                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING             |                                | COMPLETED<br>25 May 78                                                               |    |
| 6. THICKNESS OF OVERBURDEN<br>81.0'                                                                                          |             | 19. SIGNATURE OF INSPECTOR<br>DAWN MARIE HARTLEY  |                                                                                                                                   | 19. SIGNATURE OF INSPECTOR                     |                                | 1                                                                                    |    |
| 7. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             | 20. SIGNATURE OF INSPECTOR                        |                                                                                                                                   | 20. SIGNATURE OF INSPECTOR                     |                                | 1                                                                                    |    |
| 8. TOTAL DEPTH OF HOLE<br>81.0'                                                                                              |             | 21. SIGNATURE OF INSPECTOR                        |                                                                                                                                   | 21. SIGNATURE OF INSPECTOR                     |                                | 1                                                                                    |    |
| ELEVATION<br>=                                                                                                               | DEPTH<br>0' | LEGEND                                            | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                      | % CORE<br>RECOVERY                             | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |    |
|                                                                                                                              |             |                                                   | SM - Orange-tan, fine to med-<br>ium grained silty sand, damp<br>with a little clay and a trace<br>of fine gravel and mica flakes |                                                | 1                              |                                                                                      | 30 |
|                                                                                                                              |             |                                                   | Clay in thin layers only                                                                                                          |                                                |                                |                                                                                      | 50 |
|                                                                                                                              | 5           |                                                   | 15% clay                                                                                                                          |                                                | 2                              |                                                                                      | 40 |
|                                                                                                                              |             |                                                   | Only a trace of clay                                                                                                              |                                                |                                |                                                                                      | 60 |
|                                                                                                                              | 10          |                                                   | No clay                                                                                                                           |                                                | 3                              |                                                                                      | 33 |
|                                                                                                                              |             |                                                   | Fine grained                                                                                                                      |                                                |                                |                                                                                      | 33 |
|                                                                                                                              | 15          |                                                   | Gray, wet, no gravel                                                                                                              |                                                | 4                              |                                                                                      | 33 |
|                                                                                                                              |             |                                                   | 10-15% plastic silt                                                                                                               |                                                | 5                              |                                                                                      | 28 |
|                                                                                                                              | 20          |                                                   |                                                                                                                                   |                                                |                                |                                                                                      | 16 |
|                                                                                                                              |             |                                                   |                                                                                                                                   |                                                | 6                              |                                                                                      | 12 |
|                                                                                                                              | 25          |                                                   |                                                                                                                                   |                                                |                                |                                                                                      | 18 |
|                                                                                                                              |             |                                                   |                                                                                                                                   |                                                |                                |                                                                                      | 14 |
|                                                                                                                              | 30          |                                                   |                                                                                                                                   |                                                |                                |                                                                                      | 99 |
|                                                                                                                              |             |                                                   |                                                                                                                                   |                                                |                                |                                                                                      | 4  |
|                                                                                                                              |             |                                                   |                                                                                                                                   |                                                |                                |                                                                                      | 5  |
|                                                                                                                              |             |                                                   | Continued on sheet 2                                                                                                              |                                                |                                |                                                                                      |    |
|                                                                                                                              |             |                                                   | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                                     |                                                |                                |                                                                                      |    |
|                                                                                                                              |             |                                                   | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID Split spoon<br>w/140 lb. hammer falling<br>80".                          |                                                |                                |                                                                                      |    |

| DRILLING LOG (Cont Sheet) |       |        | 4 TOP OF HOLE                                                                                    |  | 25.0' MLW               |                                | Hole No. SR-17                                                                       |    |
|---------------------------|-------|--------|--------------------------------------------------------------------------------------------------|--|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|----|
| PROJECT                   |       |        | Enlargement of Kings Island                                                                      |  | INSTALLATION            |                                | Savannah River, Savannah, GA                                                         |    |
| TURNING BASIN             |       |        |                                                                                                  |  |                         |                                | SHEET 2 OF 3 LOGS                                                                    |    |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                     |  | % CORE<br>RECOV.<br>EST | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |    |
| a                         | 30    | c      | d                                                                                                |  | e                       |                                | f                                                                                    | B. |
|                           |       |        | SM - Gray fine grained silty sand with mica flakes and green and dark brown plastic silty layers |  |                         |                                |                                                                                      | 20 |
|                           |       |        | No silt, with organic matter                                                                     |  |                         | 7                              |                                                                                      | 16 |
|                           | 35    |        | No organic matter                                                                                |  |                         |                                |                                                                                      | 26 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 14 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 30 |
|                           | 40    |        |                                                                                                  |  |                         | 8                              |                                                                                      | 36 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 36 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 38 |
|                           |       |        | Fine to medium grained                                                                           |  |                         |                                |                                                                                      | 36 |
|                           | 45    |        | With wood chunks                                                                                 |  |                         | 9                              |                                                                                      | 44 |
|                           |       |        | Fine grained, without wood chunks                                                                |  |                         |                                |                                                                                      | 20 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 36 |
|                           | 50    |        |                                                                                                  |  |                         | 10                             |                                                                                      | 38 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 38 |
|                           |       |        |                                                                                                  |  |                         |                                |                                                                                      | 46 |
|                           | 55    |        | Fine to medium grained                                                                           |  |                         | 11                             |                                                                                      | 30 |
|                           |       |        | Medium to fine grained with small gray clay patches                                              |  |                         |                                |                                                                                      | 34 |
|                           | 60    |        |                                                                                                  |  |                         |                                |                                                                                      | 45 |
|                           |       |        | Medium grained                                                                                   |  |                         | 12                             |                                                                                      | 36 |
|                           |       |        | Medium to coarse grained                                                                         |  |                         |                                |                                                                                      | 50 |
|                           | 65    |        | With wood chunks                                                                                 |  |                         |                                |                                                                                      | 22 |
|                           |       |        | Fine to medium grained, no wood chunks, with a trace of clay                                     |  |                         |                                |                                                                                      | 20 |
|                           |       |        |                                                                                                  |  |                         | 13                             |                                                                                      | 50 |
|                           | 70    |        | MH - Dark green plastic silt with small pockets of sand throughout with fine mica flakes         |  |                         |                                |                                                                                      | 36 |
|                           |       |        | Continued on sheet 3                                                                             |  |                         |                                |                                                                                      |    |

| DRILLING LOG (Cont Sheet) |       | FILE # TOP OF HOLE          |                                                                                                     | 25.0' MLW               |                                | Hole No. SH-17                                                                       |       |
|---------------------------|-------|-----------------------------|-----------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                   |       | Enlargement of Kings Island |                                                                                                     | INSTALLATION            |                                | Savannah River, Savannah, GA                                                         |       |
| Turning Basin             |       |                             |                                                                                                     |                         |                                | SHEET 3 OF 3 SHEETS                                                                  |       |
| ELEVATION                 | DEPTH | LOG #                       | CLASSIFICATION OF MATERIALS<br>(Description)                                                        | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS |
|                           | 70    |                             | MH - Dark green plastic silt,<br>with fine mica flakes and<br>small pockets of sand through-<br>out |                         |                                |                                                                                      | 100   |
|                           |       |                             | No sand                                                                                             |                         | 14                             |                                                                                      | 89    |
|                           | 75    |                             |                                                                                                     |                         |                                |                                                                                      | 55    |
|                           |       |                             |                                                                                                     |                         |                                |                                                                                      | 30    |
|                           |       |                             |                                                                                                     |                         |                                |                                                                                      | 31    |
|                           |       |                             |                                                                                                     |                         |                                |                                                                                      | 36    |
|                           | 80    |                             | With occasional thin gray<br>fine grained sand lenses                                               |                         | 15                             |                                                                                      | 40    |
|                           |       |                             |                                                                                                     |                         |                                |                                                                                      | 30    |
|                           |       |                             | Bottom of Hole 81.0'                                                                                |                         |                                |                                                                                      |       |

Hole No. SH-18

| DRILLING LOG                                            |       | DIVISION                                                                                             | INSTALLATION                                                                            |                 | SHEET 1 OF 2 SHEETS                 |                                                                                |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------|-------------------------------------|--------------------------------------------------------------------------------|
| 1. PROJECT                                              |       | South Atlantic                                                                                       | Savannah River, Savannah, GA                                                            |                 |                                     |                                                                                |
| 2. LOCATION (Coordinates or Station)                    |       | Enlargement of Kings Island Turning Basin                                                            | 10. SIZE AND TYPE OF BIT                                                                |                 | 1 3/8" ID Split-spoon               |                                                                                |
| 3. DRILLING AGENCY                                      |       | N777075 E818800                                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)                                              |                 | 4" Auger                            |                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-18                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                 |                 | 7" Fishtrap                         |                                                                                |
| 5. NAME OF DRILLER                                      |       | T. W. Scott                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                               |                 | DISTURBED 12 UNDISTURBED 0          |                                                                                |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. | 14. TOTAL NUMBER CORE BOXES                                                             |                 |                                     |                                                                                |
| 7. THICKNESS OF OVERBURDEN                              |       | 67.5'                                                                                                | 15. ELEVATION GROUND WATER                                                              |                 |                                     |                                                                                |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                                                 | 16. DATE HOLE                                                                           |                 | STARTED 1 Jun 78 COMPLETED 2 Jun 78 |                                                                                |
| 9. TOTAL DEPTH OF HOLE                                  |       | 67.5'                                                                                                | 17. ELEVATION TOP OF HOLE                                                               |                 | 12.7' MLW                           |                                                                                |
|                                                         |       |                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING                                                      |                 | 3                                   |                                                                                |
|                                                         |       |                                                                                                      | 19. SIGNATURE OF INSPECTOR                                                              |                 | DAWN MARIE HARTLEY                  |                                                                                |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY | BOX OR SAMPLE NO.                   | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                         | 0     |                                                                                                      |                                                                                         |                 | JAR                                 | BLOWS                                                                          |
|                                                         |       |                                                                                                      | SC - Orange-tan, fine to medium grained clayey sand, moist, with gray clay layers       |                 | 1                                   | W. T. 4.0'                                                                     |
|                                                         |       |                                                                                                      |                                                                                         |                 |                                     | Date 1 Jun 78                                                                  |
|                                                         |       |                                                                                                      |                                                                                         |                 |                                     | Depth to water during drilling.                                                |
|                                                         | 5     |                                                                                                      | Saturated                                                                               |                 |                                     |                                                                                |
|                                                         |       |                                                                                                      | SM - Brown, gray, fine grained, silty sand with occasional clay layers                  |                 | 2                                   | W. T. 3.5'                                                                     |
|                                                         |       |                                                                                                      |                                                                                         |                 |                                     | Water Table reading 24 hrs. after hole completed.                              |
|                                                         | 10    |                                                                                                      | OL - Dark brown, soft fat, clayey organic silt                                          |                 | 3                                   |                                                                                |
|                                                         |       |                                                                                                      | SM - Tan, gray, fine grained silty sand with fine mica flakes                           |                 | 4                                   |                                                                                |
|                                                         | 15    |                                                                                                      | Gray                                                                                    |                 |                                     |                                                                                |
|                                                         |       |                                                                                                      |                                                                                         |                 | 5                                   |                                                                                |
|                                                         | 20    |                                                                                                      |                                                                                         |                 |                                     |                                                                                |
|                                                         |       |                                                                                                      | MI - Gray-green, soft plastic silt with a trace of organic matter                       |                 | 6                                   |                                                                                |
|                                                         | 25    |                                                                                                      | SN - Gray, fine to medium grained silty sand                                            |                 | 7                                   |                                                                                |
|                                                         |       |                                                                                                      | Fine gravel layer with occasional thin gray clay layers                                 |                 |                                     |                                                                                |
|                                                         | 30    |                                                                                                      | Continued on sheet 2                                                                    |                 |                                     |                                                                                |
|                                                         |       |                                                                                                      | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                 |                                     |                                                                                |
|                                                         |       |                                                                                                      |                                                                                         |                 |                                     | BLOWS PER FOOT:                                                                |
|                                                         |       |                                                                                                      |                                                                                         |                 |                                     | Number required to drive 1 3/8" ID split-spoon w/140 lb. hammer                |

| DRILLING LOG (Cont Sheet)           |       | REF - 4 TOP OF HOLE          | 12.7' MLW                                                                      |                     | Hole No. SH-18          |                                                                                      |
|-------------------------------------|-------|------------------------------|--------------------------------------------------------------------------------|---------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT Enlargement of Kings Island |       | INSTALLATION                 |                                                                                |                     | SHEET 2                 |                                                                                      |
| Turning Basin                       |       | Savannah River, Savannah, GA |                                                                                |                     | OF 2 SHEETS             |                                                                                      |
| ELEVATION                           | DEPTH | LEGEND                       | CLASSIFICATION OF MATERIALS<br>(Description)                                   | % CORE<br>RECOVERED | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|                                     | 30    |                              |                                                                                |                     | JAR                     |                                                                                      |
|                                     |       |                              | SM - Gray, fine grained silty<br>sand with occasional thin<br>gray clay layers |                     |                         | 22                                                                                   |
|                                     |       |                              | With a thin layer of fine<br>gravel                                            |                     | 8                       | 16                                                                                   |
|                                     | 35    |                              | With mica flakes but no clay<br>or gravel                                      |                     |                         | 22                                                                                   |
|                                     |       |                              | Fine to medium grained                                                         |                     |                         | 20                                                                                   |
|                                     |       |                              | Medium to coarse grained with<br>some fine gravel                              |                     | 9                       | 15                                                                                   |
|                                     | 40    |                              |                                                                                |                     |                         | 30                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 20                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 27                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 33                                                                                   |
|                                     | 45    |                              |                                                                                |                     |                         | 38                                                                                   |
|                                     |       |                              | Fine grained, no gravel                                                        |                     |                         | 30                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 33                                                                                   |
|                                     | 50    |                              |                                                                                |                     | 10                      |                                                                                      |
|                                     |       |                              | SM - Green plastic silt with<br>fine mica flakes                               |                     |                         | 34                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 49                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 40                                                                                   |
|                                     | 55    |                              |                                                                                |                     |                         | 41                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 45                                                                                   |
|                                     |       |                              |                                                                                |                     | 11                      | 57                                                                                   |
|                                     | 60    |                              |                                                                                |                     |                         | 89                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 40                                                                                   |
|                                     |       |                              |                                                                                |                     |                         | 40                                                                                   |
|                                     | 65    |                              |                                                                                |                     |                         | 80                                                                                   |
|                                     |       |                              |                                                                                |                     | 12                      | 33                                                                                   |
|                                     |       |                              | Bottom of Hole 67.5'                                                           |                     |                         | 41                                                                                   |
|                                     | 70    |                              |                                                                                |                     |                         |                                                                                      |



File No. SH-20

| DRILLING LOG                                            |  | DIVISION                                                                                             |  | Notes No. SH-20                            |  | SHEET 1 OF 2 SHEETS                   |  |
|---------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|--|--------------------------------------------|--|---------------------------------------|--|
| 1. PROJECT                                              |  | South Atlantic                                                                                       |  | Savannah River, Savannah, GA               |  |                                       |  |
| 2. LOCATION (Continuation of Station)                   |  | Turning Basin                                                                                        |  | NO. SIZE AND TYPE OF BIT                   |  | 1 1/8" ID Spitspoon                   |  |
| N776665 E819180                                         |  |                                                                                                      |  | 11. DAYUM FOR ELEVATION SHOWN (TEN = MIL)  |  | 4" Auger<br>7" Fishra                 |  |
| 3. DRILLING AGENCY                                      |  | Savannah District                                                                                    |  | 12. MANUFACTURER'S DESIGNATION OF DRILL    |  | CME 45; CME 75                        |  |
| 4. HOLE NO. (As shown on drawing title and file number) |  | SH-20                                                                                                |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |  | DISTURBED 15 UNDISTURBED 0            |  |
| 5. NAME OF DRILLER                                      |  | T. W. Scott                                                                                          |  | 14. TOTAL NUMBER CORE BOXES                |  |                                       |  |
| 6. DIRECTION OF HOLE                                    |  | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 15. ELEVATION GROUND WATER                 |  |                                       |  |
| 7. THICKNESS OF OVERBURDEN                              |  | 70.5'                                                                                                |  | 16. DATE HOLE                              |  | STARTED 24 Apr 78 COMPLETED 30 May 78 |  |
| 8. DEPTH DRILLED INTO ROCK                              |  | 0.0'                                                                                                 |  | 17. ELEVATION TOP OF HOLE                  |  | 13.5' MLW                             |  |
| 9. TOTAL DEPTH OF HOLE                                  |  | 70.5'                                                                                                |  | 18. TOTAL CORE RECOVERY FOR BORING         |  |                                       |  |
|                                                         |  |                                                                                                      |  | 19. SIGNATURE OF INSPECTOR                 |  | C. GRIFFIN/D. HARLEY                  |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                               | CORE RECOVERY | BOX OR SAMPLE | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) | BLOWS |
|-----------|-------|--------|-----------------------------------------------------------------------------------------|---------------|---------------|--------------------------------------------------------------------------------|-------|
|           |       |        | HL - Tan inorganic silt with traces of fine sand and mica                               |               | 1             |                                                                                | 7     |
|           |       |        | Becomes more sandy                                                                      |               |               |                                                                                |       |
|           |       |        | SH - Dark gray and brown, fine to medium silty sand with soft silt layers               |               | 2             | W. T. 5.0'                                                                     | 12    |
|           |       |        | Dark gray and green, fine grained, saturated, with no silt layers                       |               | 3             | Date 24 Apr 78                                                                 | 8     |
|           |       |        | Dark green with gray layers                                                             |               |               | Depth to water during drilling.                                                | 7     |
|           |       |        | Gray with some pieces of rotten wood, no clay                                           |               |               |                                                                                |       |
|           |       |        | Green, no wood                                                                          |               | 4             | W. T. 3.5'                                                                     | 7     |
|           |       |        |                                                                                         |               |               | Water table reading 24 hrs. after hole completed.                              | 7     |
|           |       |        |                                                                                         |               |               |                                                                                |       |
|           |       |        | MH - Dark brown, soft fat clayey silt with traces of fine mica                          |               | 5             |                                                                                | 3     |
|           |       |        |                                                                                         |               |               |                                                                                | 0     |
|           |       |        |                                                                                         |               |               |                                                                                | 1     |
|           |       |        | With tan sand layers                                                                    |               |               |                                                                                | 4     |
|           |       |        | SM - Brown, fine to medium grained silty sand                                           |               | 6             |                                                                                | 9     |
|           |       |        | Tan and brown                                                                           |               |               |                                                                                | 8     |
|           |       |        | Gray, fine grained                                                                      |               |               |                                                                                | 10    |
|           |       |        |                                                                                         |               | 7             |                                                                                | 11    |
|           |       |        |                                                                                         |               |               |                                                                                | 20    |
|           |       |        |                                                                                         |               |               |                                                                                | 1     |
|           |       |        | Continued on sheet 2                                                                    |               |               | BLOWS PER FOOT:                                                                |       |
|           |       |        | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |               |               | Number required to drive 1 3/8" ID Spitspoon w/140 lb. hammer falling 70"      |       |

| DRILLING LOG (Cont Sheet)                         |            | REV. 1 TOP OF HOLE                         |                                                                                                | 12.5' MLW                    |                                | Hole No. SH-22                                                                            |       |
|---------------------------------------------------|------------|--------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|-------|
| PROJECT Enlargement of Kings Island Turning Basin |            | INSTALLATION Savannah River, Savannah, GA. |                                                                                                | SHEET 2 OF 2 SHEETS          |                                |                                                                                           |       |
| ELEVATION<br>a                                    | DEPTH<br>b | LEGEND<br>c                                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                              | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |       |
|                                                   | 30         |                                            | SM - Light gray, fine grained<br>silty sand, with mica flakes<br>and occasional organic layers |                              |                                |                                                                                           | BLOWS |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 33    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 20    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 20    |
|                                                   | 35         |                                            |                                                                                                |                              |                                |                                                                                           | 29    |
|                                                   |            |                                            | Gray, fine to medium grained                                                                   |                              | 8                              |                                                                                           | 17    |
|                                                   |            |                                            | With occasional layers of<br>fine gravel                                                       |                              |                                |                                                                                           | 17    |
|                                                   | 40         |                                            |                                                                                                |                              |                                |                                                                                           | 19    |
|                                                   |            |                                            | Fine grained, no gravel                                                                        |                              |                                |                                                                                           | 20    |
|                                                   |            |                                            | Fine to medium grained                                                                         |                              | 9                              |                                                                                           | 14    |
|                                                   | 45         |                                            |                                                                                                |                              |                                |                                                                                           | 11    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 11    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 12    |
|                                                   | 50         |                                            | Fine grained                                                                                   |                              |                                |                                                                                           | 40    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 37    |
|                                                   |            |                                            | MH - Green plastic silt with<br>fine mica flakes                                               |                              |                                |                                                                                           | 23    |
|                                                   | 55         |                                            |                                                                                                |                              | 10                             |                                                                                           | 19    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 34    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 36    |
|                                                   | 60         |                                            |                                                                                                |                              |                                |                                                                                           | 34    |
|                                                   |            |                                            |                                                                                                |                              | 11                             |                                                                                           | 34    |
|                                                   |            |                                            |                                                                                                |                              |                                |                                                                                           | 40    |
|                                                   | 65         |                                            |                                                                                                |                              |                                |                                                                                           | 66    |
|                                                   |            |                                            |                                                                                                |                              | 12                             |                                                                                           | 70    |
|                                                   |            |                                            | Bottom of Hole 67.5'                                                                           |                              |                                |                                                                                           | 70    |
|                                                   | 70         |                                            |                                                                                                |                              |                                |                                                                                           |       |

| DRILLING LOG                                         |       | DIVISION                                                                                             |                                                                                         | INSTALLATION                                  |                   | Hole No. SH-22                                                                                 |  |
|------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------|-------------------|------------------------------------------------------------------------------------------------|--|
| PROJECT                                              |       | South Atlantic                                                                                       |                                                                                         | Savannah River, Savannah, GA                  |                   | SHEET 1 OF 2 SHEETS                                                                            |  |
| LOCATION (Coordinates or Station)                    |       | Enlargement of Kings Island Turning Basin                                                            |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID Spillspoon |                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)                                                     |  |
| N776200                                              |       | E819310                                                                                              |                                                                                         | MLW                                           |                   | 9" SURVEY PILE                                                                                 |  |
| DRILLING AGENCY                                      |       | Savannah District                                                                                    |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL       |                   | CME 75                                                                                         |  |
| HOLE NO. (As shown on drawing title and file number) |       | SR-22                                                                                                |                                                                                         | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN     |                   | DISTURBED 12 UNDISTURBED 0                                                                     |  |
| NAME OF DRILLER                                      |       | T. W. Scott                                                                                          |                                                                                         | 14. TOTAL NUMBER CORE BOXES                   |                   |                                                                                                |  |
| DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                         | 15. ELEVATION GROUND WATER                    |                   |                                                                                                |  |
| THICKNESS OF OVERBURDEN                              |       | 67.5'                                                                                                |                                                                                         | 16. DATE HOLE                                 |                   | STARTED 30 May 78 COMPLETED 1 Jun 78                                                           |  |
| DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                                                 |                                                                                         | 17. ELEVATION TOP OF HOLE                     |                   | 12.5' MLW                                                                                      |  |
| TOTAL DEPTH OF HOLE                                  |       | 67.5'                                                                                                |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING            |                   | %                                                                                              |  |
|                                                      |       |                                                                                                      |                                                                                         | 19. SIGNATURE OF INSPECTOR                    |                   | DAWN MARIE HARTLEY                                                                             |  |
| ELEVATION                                            | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant)                |  |
|                                                      |       |                                                                                                      | SM - Brown, fine grained silty sand, moist, with mica flakes, with organic matter       |                                               | 1                 | BLOWS                                                                                          |  |
|                                                      |       |                                                                                                      | SC - Tan, fine grained clayey sand, damp, with mica flakes                              |                                               | 2                 | 12                                                                                             |  |
|                                                      |       |                                                                                                      | SM - Orange-tan, fine to medium grained silty sand, damp, with mica flakes              |                                               |                   | 23                                                                                             |  |
|                                                      |       |                                                                                                      | Saturated                                                                               |                                               |                   | 25                                                                                             |  |
|                                                      |       |                                                                                                      | MH - Dark brown, soft fat clayey silt, with fine mica flakes                            |                                               | 3                 | 6                                                                                              |  |
|                                                      |       |                                                                                                      | SM - Light gray, fine grained silty sand, with mica flakes                              |                                               | 4                 | 7                                                                                              |  |
|                                                      |       |                                                                                                      | With occasional thin layers of organic matter                                           |                                               |                   | 16                                                                                             |  |
|                                                      |       |                                                                                                      | No organic layers                                                                       |                                               | 5                 | 9                                                                                              |  |
|                                                      |       |                                                                                                      |                                                                                         |                                               |                   | 12                                                                                             |  |
|                                                      |       |                                                                                                      |                                                                                         |                                               | 6                 | 12                                                                                             |  |
|                                                      |       |                                                                                                      | With occasional organic layers                                                          |                                               |                   | 12                                                                                             |  |
|                                                      |       |                                                                                                      |                                                                                         |                                               | 7                 | 12                                                                                             |  |
|                                                      |       |                                                                                                      |                                                                                         |                                               |                   | 14                                                                                             |  |
|                                                      |       |                                                                                                      | Continued on sheet 2                                                                    |                                               |                   |                                                                                                |  |
|                                                      |       |                                                                                                      | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                               |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |  |

| WING LOG (Cont Sheet)       |       | ELEV 1 TOP OF HOLE 13.5' MLW |                                                                                   | Hole No. SH-20         |                                |                                                                                      |
|-----------------------------|-------|------------------------------|-----------------------------------------------------------------------------------|------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| Enlargement of Kings Island |       | INSTALLATION                 |                                                                                   | SHEET 2                |                                |                                                                                      |
| Turning Basin               |       | Savannah River, Savannah, GA |                                                                                   | OF 2 SHEETS            |                                |                                                                                      |
| VARIATION                   | DEPTH | LEGEND                       | CLASSIFICATION OF MATERIALS<br>(Description)                                      | % CORE<br>RECOV.<br>BY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|                             | 30    | c                            | d                                                                                 | e                      |                                | f                                                                                    |
|                             |       |                              | SM - Tan, gray, medium grained<br>silty sand with occasional<br>large size gravel |                        |                                |                                                                                      |
|                             |       |                              | Gray with gray clay layers                                                        |                        |                                |                                                                                      |
|                             |       |                              |                                                                                   |                        | 8                              |                                                                                      |
|                             | 35    |                              |                                                                                   |                        |                                |                                                                                      |
|                             |       |                              | No gravel                                                                         |                        |                                |                                                                                      |
|                             | 40    |                              |                                                                                   |                        | 9                              |                                                                                      |
|                             |       |                              | No Clay                                                                           |                        | 10                             |                                                                                      |
|                             | 45    |                              |                                                                                   |                        |                                |                                                                                      |
|                             |       |                              | With patches of green silt                                                        |                        |                                |                                                                                      |
|                             |       |                              | No silt                                                                           |                        | 11                             |                                                                                      |
|                             |       |                              | With small gray clay patches                                                      |                        | 12                             |                                                                                      |
|                             | 50    |                              |                                                                                   |                        |                                |                                                                                      |
|                             |       |                              | SM - Green plastic silt with<br>occasional fine grained sand<br>lenses            |                        |                                |                                                                                      |
|                             | 55    |                              |                                                                                   |                        |                                |                                                                                      |
|                             |       |                              | With fine mica flakes                                                             |                        | 13                             |                                                                                      |
|                             | 60    |                              |                                                                                   |                        |                                |                                                                                      |
|                             |       |                              | No sand lenses                                                                    |                        | 14                             |                                                                                      |
|                             | 65    |                              |                                                                                   |                        |                                |                                                                                      |
|                             | 70    |                              |                                                                                   |                        | 15                             |                                                                                      |
|                             |       |                              | Bottom of Hole 70.5'                                                              |                        |                                |                                                                                      |

| DRILLING LOG                                                                                                                 |            | DIVISION                                                                           | INSTALLATION                                                                                     | Hole No.                | SHEET                        |                                                                                                      |            |
|------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------|------------------------------|------------------------------------------------------------------------------------------------------|------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            | SOUTH ATLANTIC                                                                     | SAVANNAH, GA.                                                                                    | SH-149                  | 1 OF 2 SHEETS                |                                                                                                      |            |
| 2. LOCATION (Coordinates or Station)<br>X = 817 840 Y = 732 530 (GA EAST)                                                    |            | 10. SIZE AND TYPE OF BIT<br>1 3/8" I.D. SPLIT SPOON                                |                                                                                                  |                         |                              |                                                                                                      |            |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW 4" SPIRAL AUGER, 5 1/2" FISHTAIL |                                                                                                  |                         |                              |                                                                                                      |            |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-149                                                            |            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                             |                                                                                                  |                         |                              |                                                                                                      |            |
| 5. NAME OF DRILLER<br>D. JUSTICE                                                                                             |            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 15 UNDISTURBED 0           |                                                                                                  |                         |                              |                                                                                                      |            |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            | 14. TOTAL NUMBER CORE BOXES 0                                                      |                                                                                                  |                         |                              |                                                                                                      |            |
| 7. THICKNESS OF OVERBURDEN 60.0'                                                                                             |            | 15. ELEVATION GROUND WATER SEE REMARKS                                             |                                                                                                  |                         |                              |                                                                                                      |            |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            | 16. DATE HOLE STARTED 18 OCT 91 COMPLETED 18 OCT 91                                |                                                                                                  |                         |                              |                                                                                                      |            |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |            | 17. ELEVATION TOP OF HOLE                                                          |                                                                                                  |                         |                              |                                                                                                      |            |
|                                                                                                                              |            | 18. TOTAL CORE RECOVERY FOR BORING N/A                                             |                                                                                                  |                         |                              |                                                                                                      |            |
|                                                                                                                              |            | 19. SIGNATURE OF INSPECTOR J. J. J. P.G.                                           |                                                                                                  |                         |                              |                                                                                                      |            |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c                                                                        | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | S CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g            | blows<br>h |
|                                                                                                                              |            |                                                                                    | (SM) BROWN, SILTY FINE TO MEDIUM SAND, TRACE OF ROOTS, SLIGHTLY DAMP.                            |                         | 1                            | CLEANED OUT HOLE WITH 4" SPIRAL AUGER FROM 1.5' TO 4.5' & 6.0' TO 9.0'.                              | 7          |
|                                                                                                                              |            |                                                                                    | (SP) LIGHT BROWN TO TAN, POORLY GRADED FINE TO MEDIUM SAND, TRACE OF SILT, SLIGHTLY DAMP.        |                         | 2                            | JAL SAMPLE #2 TAKEN FROM AUGER FROM 1.5' TO 4.5'.                                                    |            |
|                                                                                                                              |            |                                                                                    | (SM) BROWN, SILTY, FINE TO MEDIUM SAND, DAMP.                                                    |                         | 3                            | BEGAN USING 5 1/2" FISHTAIL & ZFOGEL DRILLING MUD AT 10.5'.                                          | 15         |
|                                                                                                                              |            |                                                                                    | MEDIUM TO COARSE SAND, SOME FINE TO MEDIUM SAND FROM 10.3' TO 10.5'.                             |                         | 4                            | SPLIT SPOON DRIVES TAKEN AT 4.5' INTERVALS.                                                          | 4          |
|                                                                                                                              |            |                                                                                    | WASH                                                                                             |                         |                              |                                                                                                      |            |
|                                                                                                                              |            |                                                                                    | (SC) GREENISH GRAY, CLAYEY, FINE TO MEDIUM SAND, SOME SILT, TRACE OF MICA, WET.                  |                         | 5                            | WATER LEVEL 6.5' DEPTH TO WATER DURING DRILLING.                                                     | 4          |
|                                                                                                                              |            |                                                                                    | WASH                                                                                             |                         |                              | WATER LEVEL NOT ENCOUNTERED 210791.                                                                  |            |
|                                                                                                                              |            |                                                                                    | (SM) TANNISH GRAY SILTY, MEDIUM TO COARSE SAND, TRACE OF CLAY, WET.                              |                         | 6                            | TAPPED HOLE TO 5.0'.                                                                                 | 18         |
|                                                                                                                              |            |                                                                                    | WASH                                                                                             |                         |                              |                                                                                                      |            |
|                                                                                                                              |            |                                                                                    | (SP) TANNISH GRAY, POORLY GRADED MEDIUM TO COARSE SAND, TRACE OF SILT, WET.                      |                         | 7                            |                                                                                                      | 15         |
|                                                                                                                              |            |                                                                                    | WASH                                                                                             |                         |                              |                                                                                                      |            |
|                                                                                                                              |            |                                                                                    | SAME AS 22.5' TO 24.0'.                                                                          |                         | 8                            |                                                                                                      | 13         |
|                                                                                                                              |            |                                                                                    | WASH                                                                                             |                         |                              |                                                                                                      |            |
|                                                                                                                              |            |                                                                                    | CONTINUED ON SHEET #2                                                                            |                         |                              |                                                                                                      |            |
|                                                                                                                              |            |                                                                                    | NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM. |                         |                              | BLOWS PER FOOT:<br>NUMBER REQUIRED TO DRIVE 1 3/8" I.D. SPLIT-SPOON WITH 140 LB. HAMMER FALLING 30". |            |

| DRILLING LOG (Cont. Sheet)           |            |             | ELEVATION TOP OF HOLE                                                             |                         | Hole No. SH-149                |                                                                                                    |
|--------------------------------------|------------|-------------|-----------------------------------------------------------------------------------|-------------------------|--------------------------------|----------------------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |            |             | INSTALLATION<br>SAVANNAH, GA.                                                     |                         | SHEET 2<br>OF 2 SHEETS         |                                                                                                    |
| ELEVATION<br>a                       | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                 | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f<br>BLOWS |
|                                      | 30         |             | Wash.                                                                             |                         |                                |                                                                                                    |
|                                      |            |             | (SM) Grey, fine to med. silty SAND. Trace of mica, wet.                           |                         | 9                              | 24                                                                                                 |
|                                      | 35         |             | Wash.                                                                             |                         |                                |                                                                                                    |
|                                      |            |             | (SP) Grey, med. to coarse, poorly graded SAND. Trace of silt & mica, wet.         |                         | 10                             | 39                                                                                                 |
|                                      | 40         |             | Wash.                                                                             |                         |                                |                                                                                                    |
|                                      |            |             | Same as 36.0' to 37.5' but coarse sand, Trace of fine gravel.                     |                         | 11                             | 46                                                                                                 |
|                                      |            |             | Wash.                                                                             |                         |                                |                                                                                                    |
|                                      | 45         |             | Same as 40.5' to 42.0'.                                                           |                         | 12                             | 33                                                                                                 |
|                                      |            |             | Wash.                                                                             |                         |                                |                                                                                                    |
|                                      | 50         |             | (GP) Greenish-grey, fine, poorly graded GRAVEL. Trace of silt & coarse sand, wet. |                         | 13                             | 17                                                                                                 |
|                                      |            |             | Wash.<br>NOTE: Wash return contained some sand and clay.                          |                         |                                |                                                                                                    |
|                                      | 55         |             | (CL) Greyish-green, silty, lean CLAY. Trace of mica & fine sand, slightly damp.   |                         | 14                             | 36                                                                                                 |
|                                      |            |             | Wash                                                                              |                         |                                |                                                                                                    |
|                                      | 60         |             | Same as 54.0' to 55.5' but dry.                                                   |                         | 15                             | 45                                                                                                 |
|                                      |            |             | Bottom of Boring 60.0'                                                            |                         |                                |                                                                                                    |

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                                           | INSTALLATION<br>SAVANNAH, GA.                                                   |                                | Hole No. 37-130<br>SHEET 1<br>OF 2 SHEETS                                                 |                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                                           | 10. SIZE AND TYPE OF BIT<br>1 3/4" splitspoon, 4" spiral auger, 5 1/2" fishtail |                                |                                                                                           |                                                                                                                                                                                                          |
| 2. LOCATION (Coordinates or Station)<br>X=817555 Y=779145 GA. EAST                                                           |              |                          |                                                                                                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                               |                                |                                                                                           |                                                                                                                                                                                                          |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                          |                                |                                                                                           |                                                                                                                                                                                                          |
| 4. HOLE NO. (as shown on drawing title and file number)<br>SH-150                                                            |              |                          |                                                                                                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 18<br>UNDISTURBED : 0 |                                |                                                                                           |                                                                                                                                                                                                          |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                                           | 14. TOTAL NUMBER CORE BOXES<br>0                                                |                                |                                                                                           |                                                                                                                                                                                                          |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                                           | 15. ELEVATION GROUND WATER SEE REMARKS                                          |                                |                                                                                           |                                                                                                                                                                                                          |
| 7. THICKNESS OF OVERBURDEN 64.5'                                                                                             |              |                          |                                                                                                                           | 16. DATE HOLE<br>STARTED : 16 OCT 91<br>COMPLETED : 17 OCT 91                   |                                |                                                                                           |                                                                                                                                                                                                          |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                          |                                                                                                                           | 17. ELEVATION TOP OF HOLE                                                       |                                |                                                                                           |                                                                                                                                                                                                          |
| 9. TOTAL DEPTH OF HOLE 64.5'                                                                                                 |              |                          |                                                                                                                           | 18. TOTAL CORE RECOVERY FOR BORING N/A                                          |                                |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          |                                                                                                                           | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                |                                |                                                                                           |                                                                                                                                                                                                          |
| ELEVATION<br>+                                                                                                               | DEPTH<br>0 + | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                         | % CORE<br>RECOVER-<br>ERY                                                       | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | (SP) Tan, coarse, poorly graded SAND, damp.                                                                               |                                                                                 | 1                              |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | (SC) Olive, fine clayey SAND. Some silt, damp.                                                                            |                                                                                 | 2                              |                                                                                           | Cleaned out hole with spiral auger to 4.5'. Jar #2 taken from auger from 1.5' to 4.5'. Splitspoon drive taken at each 4.5' interval to 55.5'. Began using 5 1/2" fishtail & Zeogel drilling mud at 6.0'. |
|                                                                                                                              | 5            |                          | Fine to med. sand, trace of fine gravel, wet.                                                                             |                                                                                 | 3                              |                                                                                           | Water level 2.0' depth to water during drilling.                                                                                                                                                         |
|                                                                                                                              |              |                          | Wash<br>NOTE: Wash return contained large amount of clay                                                                  |                                                                                 |                                |                                                                                           | Water level 17' depth to water on 21 Oct 91. Taped hole to 19.8' depth.                                                                                                                                  |
|                                                                                                                              | 10           |                          | Same as 4.5' to 6.0'.                                                                                                     |                                                                                 | 4                              |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | Wash                                                                                                                      |                                                                                 |                                |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              | 15           |                          | (SP) Olive grey, med., poorly graded SAND. Trace of silt, wet.                                                            |                                                                                 | 5                              |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | Wash.                                                                                                                     |                                                                                 |                                |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              | 20           |                          | (SM) Olive-grey, med., silty SAND, wet.                                                                                   |                                                                                 | 6                              |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | Wash.<br>Note: Traces of wood in wash.                                                                                    |                                                                                 |                                |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              | 25           |                          | (SP) Light brown, med. to coarse, poorly graded SAND. Trace of silt, wet.                                                 |                                                                                 | 7                              |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | Wash.                                                                                                                     |                                                                                 |                                |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | Same as 22.5' to 24.0', but with traces of fine gravel.                                                                   |                                                                                 | 8                              |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              |              |                          | Wash.                                                                                                                     |                                                                                 |                                |                                                                                           |                                                                                                                                                                                                          |
|                                                                                                                              | 30           |                          | Continued on sheet #2<br>NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                 |                                |                                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30"                                                                                                          |





Hole No. SH-15 /

| DRILLING LOG                                                                                                                 |       | VISION SOUTH ATLANTIC |                                                             | INSTALLATION: SAVANNAH, GA.                                                                       |                          | SHEET 1 OF 1 SHEETS                                                                                                                     |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                             | 10. SIZE AND TYPE OF BIT 1 1/4" split spoon, 5/8" fishtail                                        |                          |                                                                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X=817067 Y=779191 GA. EAST                                                           |       |                       |                                                             | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                          |                                                                                                                                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                       |                                                             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                            |                          |                                                                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-157                                                            |       |                       |                                                             | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                        |                          | DISTURBED : 5<br>UNDISTURBED : 0                                                                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                       |                                                             | 14. TOTAL NUMBER CORE BOXES                                                                       |                          |                                                                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                             | 15. ELEVATION GROUND WATER N/A                                                                    |                          |                                                                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN 59.6' (Water 38.6')                                                                               |       |                       |                                                             | 16. DATE HOLE                                                                                     |                          | STARTED : 10 DEC 91<br>COMPLETED : 10 DEC 91                                                                                            |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                       |                                                             | 17. ELEVATION TOP OF HOLE 0.0'                                                                    |                          |                                                                                                                                         |  |
| 9. TOTAL DEPTH OF HOLE 59.6'                                                                                                 |       |                       |                                                             | 18. TOTAL CORE RECOVERY FOR BORING                                                                |                          | N/A %                                                                                                                                   |  |
|                                                                                                                              |       |                       |                                                             | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                          |                                                                                                                                         |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                | % CORE RECOVERY                                                                                   | BOX OR SAMPLE NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                       |  |
| 0.0                                                                                                                          | 0     |                       |                                                             |                                                                                                   |                          | BLOWS                                                                                                                                   |  |
|                                                                                                                              |       |                       | Water                                                       |                                                                                                   |                          | Sclerometer change at 35.0'.<br>Set 6" diameter casing by own weight to 43.0'.                                                          |  |
|                                                                                                                              | 35    |                       | Bottom of Harbor 38.6'                                      |                                                                                                   |                          |                                                                                                                                         |  |
| -38.6'                                                                                                                       | 40    |                       | (SP) Tan, poorly graded, coarse SAND.                       |                                                                                                   | 1                        | Weight of rods drove split spoon to 40.1'. Had no recovery. redrove to 40.1' then cont'd. drive to 41.6'. Sample 1 from 38.6' to 41.6'. |  |
| -41.6'                                                                                                                       |       |                       | Some fine gravel.                                           |                                                                                                   |                          |                                                                                                                                         |  |
| -44.6'                                                                                                                       | 45    |                       | (CL) Grey, silty, lean CLAY. Some fine sand, trace of mica. |                                                                                                   | 2                        |                                                                                                                                         |  |
|                                                                                                                              | 50    |                       |                                                             |                                                                                                   | 3                        |                                                                                                                                         |  |
|                                                                                                                              | 55    |                       |                                                             |                                                                                                   | 4                        |                                                                                                                                         |  |
| -58.1'                                                                                                                       |       |                       | (SC) Grey, fine clayey SAND. Some silt, trace of mica.      |                                                                                                   | 5                        |                                                                                                                                         |  |
| -59.6'                                                                                                                       | 60    |                       | Bottom of Boring 59.6'                                      |                                                                                                   |                          |                                                                                                                                         |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                       |                                                             | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |                          |                                                                                                                                         |  |

Hole No. SM-130

| DRILLING LOG                                                                                                                 |       | VISION<br>SOUTH ATLANTIC |                                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                      |                   | SHEET 1<br>OF 1 SHEETS                                                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                          |                                                                   | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 5/2" fish tail                                     |                   |                                                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X=817368 Y=779194 GA. EAST                                                           |       |                          |                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                  |                   |                                                                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                          |                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                             |                   |                                                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-158                                                            |       |                          |                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 6<br>UNDISTURBED : 0                     |                   |                                                                                                                                   |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                          |                                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                   |                   |                                                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                          |                                                                   | 15. ELEVATION GROUND WATER N/A                                                                     |                   |                                                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (WATER 34.5')                                                                            |       |                          |                                                                   | 16. DATE HOLE<br>STARTED : 6 DEC 91<br>COMPLETED : 6 DEC 91                                        |                   |                                                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                          |                                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                  |                   |                                                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |       |                          |                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                          |                   |                                                                                                                                   |  |
|                                                                                                                              |       |                          |                                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                   |                   |                                                                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                      | % CORE RECOVERY<br>JAR                                                                             | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                 |  |
| 0+0                                                                                                                          | 0     |                          |                                                                   |                                                                                                    |                   | BLOWS                                                                                                                             |  |
|                                                                                                                              | 30    |                          | Water                                                             |                                                                                                    |                   | Scale change at 30.0'.<br>Set 6" diameter casing by own weight to 40.3'.                                                          |  |
| -34.5'                                                                                                                       | 35    |                          | Bottom of Harbor 34.5'                                            |                                                                                                    |                   |                                                                                                                                   |  |
|                                                                                                                              |       |                          | (SP) Tan, fine to medium, poorly graded SAND. Trace of silt.      |                                                                                                    | 1                 | Weight of rods drove split spoon from 34.5' to 35.8', cont'd. drive to 36.0' w/ one hammer blow. Pulled tool but had no recovery. |  |
| -37.5'                                                                                                                       |       |                          | Medium to coarse.                                                 |                                                                                                    |                   |                                                                                                                                   |  |
| -39.0'                                                                                                                       | 40    |                          | Greyish-tan, trace of wood particles.                             |                                                                                                    | 2                 | Redrove first drive then cont'd. drive to 37.5'. Jar sample #1 from 34.5' to 37.5'. Began using Zeogel drilling mud at 37.5'.     |  |
| -43.5'                                                                                                                       |       |                          |                                                                   |                                                                                                    |                   |                                                                                                                                   |  |
|                                                                                                                              | 45    |                          | (CH) Dark olive-grey, fat CLAY. Trace of silt, fine sand & mica.  |                                                                                                    | 3                 |                                                                                                                                   |  |
| -46.5'                                                                                                                       |       |                          | Some fine sand.                                                   |                                                                                                    |                   |                                                                                                                                   |  |
| -48.0'                                                                                                                       |       |                          |                                                                   |                                                                                                    |                   |                                                                                                                                   |  |
|                                                                                                                              | 50    |                          | (CL) Olive-grey, silty, lean CLAY. Some fine sand, trace of mica. |                                                                                                    | 4                 |                                                                                                                                   |  |
| -49.5'                                                                                                                       |       |                          | Trace of fine sand.                                               |                                                                                                    |                   |                                                                                                                                   |  |
| -51.0'                                                                                                                       |       |                          | Some fine sand.                                                   |                                                                                                    |                   |                                                                                                                                   |  |
| -52.5'                                                                                                                       |       |                          |                                                                   |                                                                                                    |                   |                                                                                                                                   |  |
|                                                                                                                              | 55    |                          | (CH) olive-grey, fat CLAY. Trace of fine sand & mica.             |                                                                                                    | 5                 |                                                                                                                                   |  |
|                                                                                                                              |       |                          |                                                                   |                                                                                                    |                   |                                                                                                                                   |  |
|                                                                                                                              | 60    |                          |                                                                   |                                                                                                    | 6                 |                                                                                                                                   |  |
| -60.0'                                                                                                                       |       |                          | Bottom of Boring 60.0'                                            |                                                                                                    |                   |                                                                                                                                   |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                          |                                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/ 140 lb. hammer falling 30". |                   |                                                                                                                                   |  |

Hole No. SM-159

| DRILLING LOG                                                                                                                 |             | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" splitspoon, 5/8" fishtail |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-816934 Y-778722 GA. EAST                                                           |             |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314       |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-159                                                            |             |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                                | 13. DISTURBED<br>4<br>13. UNDISTURBED<br>0                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>50.3' (Water 41.3')                                                                            |             |                          |                                                                                                  | 16. DATE HOLE                                                |                                | 16. STARTED<br>14 JAN 92<br>16. COMPLETED<br>14 JAN 92                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>50.3'                                                                                              |             |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                                |                                                                                                  |  |
|                                                                                                                              |             |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                                |                                                                                                  |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>JAN | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>1         |  |
|                                                                                                                              |             |                          | Water                                                                                            |                                                              |                                |                                                                                                  |  |
|                                                                                                                              |             |                          | Bottom of Harbor 41.3'                                                                           |                                                              |                                |                                                                                                  |  |
| -41.3'                                                                                                                       |             |                          | (SC) Olive-grey, fine clayey SAND. Trace of mica.                                                |                                                              | 1                              | 5                                                                                                |  |
| -42.8'                                                                                                                       |             |                          | (SM) Dark grey, fine silty SAND. Trace of clay & mica.                                           |                                                              | 2                              | 33                                                                                               |  |
| -45.8'                                                                                                                       |             |                          | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                                                              | 3                              | 62                                                                                               |  |
| -47.3'                                                                                                                       |             |                          | Trace of silt.                                                                                   |                                                              | 4                              | 29                                                                                               |  |
| -50.3'                                                                                                                       |             |                          | Bottom of Boring 50.3'                                                                           |                                                              |                                | 39                                                                                               |  |
|                                                                                                                              |             |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                                | 52                                                                                               |  |
|                                                                                                                              |             |                          |                                                                                                  |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |

SH-160

| DRILLING LOG                                                                                                                 |       | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                             |                   | SHEET 1<br>OF 1 SHEETS                                                                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" Spat spoon, 5/2" Fishtail              |                   |                                                                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=817039 Y=778184 GA. EAST                                                           |       |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSU)<br>MLW                         |                   |                                                                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                    |                   |                                                                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-160                                                            |       |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 5 UNDISTURBED: 0 |                   |                                                                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                          |                   |                                                                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                         |                   |                                                                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>50.8' (Water 40.3')                                                                            |       |                          |                                                                                                  | 16. DATE HOLE<br>STARTED: 14 JAN 91 COMPLETED: 14 JAN 91                  |                   |                                                                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                         |                   |                                                                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>50.8'                                                                                              |       |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                 |                   |                                                                                                                                                  |  |
|                                                                                                                              |       |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                          |                   |                                                                                                                                                  |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY                                                           | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. If significant)                                                                 |  |
| 0.0                                                                                                                          | 0     |                          | Water.                                                                                           |                                                                           |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 43.4'.<br>BLOWS                                                                |  |
| -40.3'                                                                                                                       | 40    |                          | Bottom of Harbor 40.3'                                                                           |                                                                           |                   |                                                                                                                                                  |  |
| -42.6'                                                                                                                       |       |                          | (MH) Dark grey to black clayey SILT.                                                             |                                                                           | 1                 | Weight of rods drove spat spoon from 40.3' to 42.6'. Cont'd. drive to 43.3' with three hammer blows. Jar sample 2 from approx. 42.6' to 43.3'. 0 |  |
| -43.3'                                                                                                                       |       |                          | (SC) Dark grey, fine to medium clayey SAND.                                                      |                                                                           | 2                 | 3                                                                                                                                                |  |
|                                                                                                                              |       |                          | (SM) Dark grey, fine silty SAND. Trace of clay.                                                  |                                                                           | 3                 | 45                                                                                                                                               |  |
| -46.3'                                                                                                                       |       |                          | (SC) Grey, fine clayey SAND. Some silt. Trace of mica.                                           |                                                                           | 4                 | 72                                                                                                                                               |  |
|                                                                                                                              |       |                          |                                                                                                  |                                                                           |                   | 38                                                                                                                                               |  |
|                                                                                                                              |       |                          |                                                                                                  |                                                                           |                   | 48                                                                                                                                               |  |
| -50.8'                                                                                                                       | 50    |                          | Bottom of Boring 50.8'                                                                           |                                                                           | 5                 | 36                                                                                                                                               |  |
|                                                                                                                              |       |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                           |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. spat spoon w/140 lb. hammer falling 30".                                                 |  |

Hole No. 37-101

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>VANNAH, GA.                              |                                | SHEET 1<br>OF 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/4" Spillspoon, 5/16" Finish |                                |                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X=818085 Y=778090 GA. EAST                                                           |              |                          |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or WSL)<br>MLW        |                                |                                                                                                      |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314   |                                |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-161                                                            |              |                          |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 4           |                                | : DISTURBED : 0<br>: UNDISTURBED : 0                                                                 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                        | 14. TOTAL NUMBER CORE BOXES 0                            |                                |                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                        | 15. ELEVATION GROUND WATER N/A                           |                                |                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 50.9' (Water 38.9')                                                                               |              |                          |                                                                                                        | 16. DATE HOLE : 14 JAN 91                                |                                | : STARTED : 14 JAN 91<br>: COMPLETED                                                                 |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                          |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                           |                                |                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 50.9'                                                                                                 |              |                          |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A                   |                                | %                                                                                                    |  |
|                                                                                                                              |              |                          |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.         |                                |                                                                                                      |  |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0 = | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOVER-<br>Y                                  | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g            |  |
|                                                                                                                              |              |                          | Water                                                                                                  |                                                          |                                | Scale change at 35.0'.<br>Set 5" diameter casing by own weight<br>to 44.9'.                          |  |
|                                                                                                                              | 35           |                          |                                                                                                        |                                                          |                                |                                                                                                      |  |
|                                                                                                                              | -38.9'       |                          | Bottom of Harbor 38.9'                                                                                 |                                                          |                                |                                                                                                      |  |
|                                                                                                                              | 40           |                          | (MH) Very dark grey clayey SILT.                                                                       |                                                          | 1                              |                                                                                                      |  |
|                                                                                                                              | -44.0'       |                          |                                                                                                        |                                                          |                                |                                                                                                      |  |
|                                                                                                                              | -44.9'       |                          | (SC) Dark grey, fine to medium clayey SAND.                                                            |                                                          | 2                              |                                                                                                      |  |
|                                                                                                                              | 45           |                          |                                                                                                        |                                                          | 3                              |                                                                                                      |  |
|                                                                                                                              |              |                          | Fine sand, some silt, trace of mica.                                                                   |                                                          |                                |                                                                                                      |  |
|                                                                                                                              | 50           |                          |                                                                                                        |                                                          | 4                              |                                                                                                      |  |
|                                                                                                                              | -50.9'       |                          | Bottom of Boring 50.9'                                                                                 |                                                          |                                |                                                                                                      |  |
|                                                                                                                              |              |                          | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                          |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D.<br>spillsppoon w/140 lb. hammer falling 30". |  |

Hole No. SH-162

| DRILLING LOG                                                                                                                 |              | VISION SOUTH ATLANTIC |                                                                     | INSTALLATION SAVANNAH, GA.                               |                          | SHEET 1 OF 1 SHEETS                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------|---------------------------------------------------------------------|----------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                       |                                                                     | 10. SIZE AND TYPE OF BIT 1 3/8" spitspoon, 5/2" fishtail |                          |                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X=817143 Y=777680 GA. EAST                                                           |              |                       |                                                                     | 11. DATUM FOR ELEVATION SHOWN (TBW or MSL)<br>MLW        |                          |                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                       |                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314    |                          |                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and title number)<br>SH-162                                                           |              |                       |                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN               |                          | DISTURBED : 6<br>UNDISTURBED : 0                                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                       |                                                                     | 14. TOTAL NUMBER CORE BOXES 0                            |                          |                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                       |                                                                     | 15. ELEVATION GROUND WATER N/A                           |                          |                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 59.9' (Water 41.5')                                                                               |              |                       |                                                                     | 16. DATE HOLE                                            |                          | STARTED : 26 JAN 92<br>COMPLETED : 26 JAN 92                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                       |                                                                     | 17. ELEVATION TOP OF HOLE 0.0'                           |                          |                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE 59.9'                                                                                                 |              |                       |                                                                     | 18. TOTAL CORE RECOVERY FOR BORING N/A                   |                          |                                                                                                        |  |
|                                                                                                                              |              |                       |                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.         |                          |                                                                                                        |  |
| ELEVATION<br>D.0                                                                                                             | DEPTH<br>D.0 | LEGEND<br>c           | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                   | % CORE RECOVERY                                          | BOX OR SAMPLE NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>BLOWS             |  |
|                                                                                                                              |              |                       | Water                                                               |                                                          |                          | Scale change at 41.5'.<br>Set 6" diameter casing by own weight to 43.3'.                               |  |
|                                                                                                                              | 40           |                       | Bottom of Harbor 41.5'                                              |                                                          |                          |                                                                                                        |  |
| -41.5'                                                                                                                       |              |                       | (MH) Very dark grey to black clayey SILT. Some fine to coarse sand. |                                                          | 1                        | Weight of rods drove spitspoon from 41.5' to 43.4'.<br>Jar sample 2 taken from approx. 43.0' to 43.4'. |  |
| -43.0'                                                                                                                       |              |                       | (SC) Very grey, fine clayey SAND. Some silt.                        |                                                          | 2                        |                                                                                                        |  |
| -43.4'                                                                                                                       |              |                       | Trace of mica.                                                      |                                                          | 3                        |                                                                                                        |  |
|                                                                                                                              | 45           |                       | Trace of silt.                                                      |                                                          |                          |                                                                                                        |  |
| -46.4'                                                                                                                       |              |                       |                                                                     |                                                          | 4                        |                                                                                                        |  |
|                                                                                                                              | 50           |                       |                                                                     |                                                          |                          |                                                                                                        |  |
|                                                                                                                              | 55           |                       |                                                                     |                                                          | 5                        |                                                                                                        |  |
|                                                                                                                              | 60           |                       |                                                                     |                                                          | 6                        |                                                                                                        |  |
| -59.9'                                                                                                                       |              |                       | Bottom of Boring 59.9'                                              |                                                          |                          | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. spitspoon w/140 lb. hammer falling 30".        |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                       |                                                                     |                                                          |                          |                                                                                                        |  |

Hole No. 37-100

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                               |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" spiltspoon, 5/16" flatbit                   |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-817375 Y-777535 GA. EAST                                                           |              |                          |                                                                                  | 11. DATUM FOR ELEVATION SHOWN (BM or NSL)<br>MLW                            |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                      |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-163                                                            |              |                          |                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :UNDISTURBED<br>:6 :0 |                                |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                               |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                  | 15. ELEVATION GROUND WATER N/A                                              |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 59.8' (Water 41.8')                                                                               |              |                          |                                                                                  | 16. DATE HOLE :STARTED :COMPLETED<br>:16 Nov 91 :16 NOV 91                  |                                |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                          |                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                              |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.8'                                                                                                 |              |                          |                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                    |                                |                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                            |                                |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>#                                | % CORE<br>RECOVERY<br>+                                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>BLOWS     |  |
|                                                                                                                              | 40           |                          | Water                                                                            |                                                                             |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 45.6'.                            |  |
|                                                                                                                              | -41.8'       |                          | Bottom of Harbor 41.8'                                                           |                                                                             |                                |                                                                                                  |  |
|                                                                                                                              | -43.3'       |                          | (MH) Dark grey, fat SILT.                                                        |                                                                             | 1                              | Weight of hammer drove spiltspoon from 41.8' to 44.3',                                           |  |
|                                                                                                                              | -44.8'       |                          | (SC) Dark grey & grey, med. to coarse clayey SAND.                               |                                                                             | 2                              | Cont'd. drive with five blows to 44.8'.                                                          |  |
|                                                                                                                              | -46.3'       |                          | (SM) Grey, fine silty SAND. Some clay in layers up to 0.3' thick, trace of mica. |                                                                             | 3                              | Material from 41.8' to approx. 43.3' was very soft & wet.                                        |  |
|                                                                                                                              |              |                          | (SC) Greenish grey, fine clayey SAND. Some silt, trace of mica.                  |                                                                             | 4                              |                                                                                                  |  |
|                                                                                                                              | 50           |                          |                                                                                  |                                                                             |                                |                                                                                                  |  |
|                                                                                                                              | 55           |                          |                                                                                  |                                                                             | 5                              |                                                                                                  |  |
|                                                                                                                              | 60           |                          |                                                                                  |                                                                             | 6                              |                                                                                                  |  |
|                                                                                                                              | -59.8'       |                          | Bottom of Boring 59.8'                                                           |                                                                             |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spiltspoon w/140 lb. hammer falling 30". |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                          |                                                                                  |                                                                             |                                |                                                                                                  |  |

Hole No. SM-104

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                 | INSTALLATION<br>SAVANNAH, GA.                                                                    |                                | SHEET 1<br>OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                 | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                                     |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X=818481 Y=777661 GA. EAST                                                           |            |                          |                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-164                                                            |            |                          |                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 6 UNDISTURBED 0                          |                                |                                                                                           |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                 | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                                |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                 | 15. ELEVATION GROUND WATER<br>N/A                                                                |                                |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>60.5' (Water 38.6')                                                                            |            |                          |                                                                 | 16. DATE HOLE<br>STARTED 16 NOV 91 COMPLETED 16 NOV 91                                           |                                |                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                          |                                                                 | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                                |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                              |            |                          |                                                                 | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                                |                                                                                           |  |
|                                                                                                                              |            |                          |                                                                 | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                                |                                                                                           |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d               | % CORE<br>RECOV-<br>ERY<br>e                                                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              | 35         |                          | Water                                                           |                                                                                                  |                                | Scale change at 35.0'. Set 6" diameter casing by own weight to 43.6'.                     |  |
| -38.6'                                                                                                                       | 40         |                          | (MH) Dark grey, clayey SILT. Very wet & soft.                   |                                                                                                  | 1                              | Weight of hammer drove splitspoon from 38.6' to 44.0'. Jar 2 from 43.7' to 44.0'.         |  |
| -43.7'                                                                                                                       | 45         |                          | (SC) Greenish-grey, fine clayey SAND. Some silt, trace of mica. |                                                                                                  | 2                              |                                                                                           |  |
|                                                                                                                              |            |                          |                                                                 |                                                                                                  | 3                              |                                                                                           |  |
|                                                                                                                              |            |                          |                                                                 |                                                                                                  | 4                              |                                                                                           |  |
|                                                                                                                              | 50         |                          |                                                                 |                                                                                                  | 5                              |                                                                                           |  |
|                                                                                                                              | 55         |                          |                                                                 |                                                                                                  | 6                              |                                                                                           |  |
| -60.5'                                                                                                                       | 60         |                          | Bottom of Boring 60.5'                                          |                                                                                                  |                                |                                                                                           |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |            |                          |                                                                 | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |                                |                                                                                           |  |



Hole No. SH-105

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                               |                                | SHEET 1<br>OF 1 SHEETS                                                                   |                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT : 1 1/2" splitspoon, 5/8" fishtail |                                |                                                                                          |                                                                                                                 |
| 2. LOCATION (Coordinates or Station)<br>X=817521 Y=777184 GA. EAST                                                           |              |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or WSL)<br>MLW           |                                |                                                                                          |                                                                                                                 |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314      |                                |                                                                                          |                                                                                                                 |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-165                                                            |              |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 6              |                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 0                                           |                                                                                                                 |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES : 0                             |                                |                                                                                          |                                                                                                                 |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                        | 15. ELEVATION GROUND WATER : N/A                            |                                |                                                                                          |                                                                                                                 |
| 7. THICKNESS OF OVERBURDEN : 50.8' (Water 38.8')                                                                             |              |                            |                                                                                                        | 16. DATE HOLE : 14 JAN 92                                   |                                | 16. DATE HOLE : 14 JAN 92                                                                |                                                                                                                 |
| 8. DEPTH DRILLED INTO ROCK : 0.0'                                                                                            |              |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE : 0.0'                            |                                | 17. ELEVATION TOP OF HOLE : 0.0'                                                         |                                                                                                                 |
| 9. TOTAL DEPTH OF HOLE : 50.8'                                                                                               |              |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING : N/A                    |                                | 18. TOTAL CORE RECOVERY FOR BORING : N/A                                                 |                                                                                                                 |
|                                                                                                                              |              |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.            |                                |                                                                                          |                                                                                                                 |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>z                | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                                      | % CORE<br>RECOVER-<br>Y                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g |                                                                                                                 |
|                                                                                                                              |              |                            | Water                                                                                                  |                                                             |                                |                                                                                          | Scale change at 35.0'.<br>Set 6" diameter casing by own weight<br>to 45.1.                                      |
|                                                                                                                              | 35           |                            |                                                                                                        |                                                             |                                |                                                                                          |                                                                                                                 |
|                                                                                                                              | -38.8'       |                            | Bottom of Harbor 44.8' to 38.8'                                                                        |                                                             |                                |                                                                                          |                                                                                                                 |
|                                                                                                                              | 40           |                            | (LH) Dark olive-grey, clayey SILT.                                                                     |                                                             | 1                              |                                                                                          | Weight of rods drove splitspoon<br>from 38.8' to 43.3'.<br>For sample 2 taken from approx.<br>42.8' to 43.3'. 0 |
|                                                                                                                              | -42.8'       |                            | (SC) Very dark grey to black, medium to<br>coarse clayey SAND. Some silt.                              |                                                             | 2                              |                                                                                          |                                                                                                                 |
|                                                                                                                              | -44.8'       |                            | (SM) Grey, fine silty SAND. Trace of clay<br>& mica.                                                   |                                                             | 3                              |                                                                                          |                                                                                                                 |
|                                                                                                                              | -46.3'       |                            | (SC) Grey, fine clayey SAND. Some silt,<br>trace of mica.                                              |                                                             | 4                              |                                                                                          |                                                                                                                 |
|                                                                                                                              | 50           |                            |                                                                                                        |                                                             | 5                              |                                                                                          |                                                                                                                 |
|                                                                                                                              | -50.8'       |                            |                                                                                                        |                                                             | 6                              |                                                                                          |                                                                                                                 |
|                                                                                                                              |              |                            | Bottom of Boring 50.8'                                                                                 |                                                             |                                |                                                                                          |                                                                                                                 |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                             |                                |                                                                                          | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30".             |

Hole No. 37-100

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                  |                                | SHEET 1<br>of 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" spoilspoon, 5/8" fishtail                   |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=817973 Y=777182 G.A.EAST                                                           |              |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                         |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-166                                                            |              |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 6<br>UNDISTURBED : 0 |                                |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                              |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>60.8' (Water 41.3')                                                                            |              |                          |                                                                                                  | 16. DATE HOLE<br>STARTED : 14 DEC 91<br>COMPLETED : 14 DEC 91                  |                                |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>60.8'                                                                                              |              |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                                |                                                                                                  |  |
|                                                                                                                              |              |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | 2 CORE<br>RECOV-<br>ERY                                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g         |  |
|                                                                                                                              |              |                          | Water                                                                                            |                                                                                |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 41.8'.                            |  |
|                                                                                                                              | 40           |                          | Bottom of Harbor 41.3'                                                                           |                                                                                |                                |                                                                                                  |  |
| -41.3'                                                                                                                       |              |                          | (SC) Grey, fine clayey SAND. Some silt.                                                          |                                                                                | 1                              | 25                                                                                               |  |
|                                                                                                                              | 45           |                          | Occasional layer of silty fine sand up to 0.2' thick.                                            |                                                                                | 2                              | 37                                                                                               |  |
| -45.8'                                                                                                                       |              |                          | (SM) Grey, fine silty SAND. Trace of mica.                                                       |                                                                                | 3                              | 64                                                                                               |  |
| -47.3'                                                                                                                       |              |                          |                                                                                                  |                                                                                | 4                              | 79                                                                                               |  |
| -48.8'                                                                                                                       |              |                          | (SC) Grey, fine clayey SAND. Some silt. trace of mica.                                           |                                                                                | 5                              | 52                                                                                               |  |
|                                                                                                                              | 50           |                          |                                                                                                  |                                                                                | 6                              | 49                                                                                               |  |
|                                                                                                                              | 55           |                          |                                                                                                  |                                                                                |                                | 47                                                                                               |  |
|                                                                                                                              | 60           |                          |                                                                                                  |                                                                                |                                | 45                                                                                               |  |
| -60.8'                                                                                                                       |              |                          | Bottom of Boring 60.8'                                                                           |                                                                                |                                | 52                                                                                               |  |
|                                                                                                                              |              |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                                | 56                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | 65                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | 68                                                                                               |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                                |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. spoilspoon w/140 lb. hammer falling 30". |  |

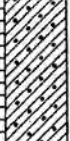
HOLE NO. 37-107

| DRILLING LOG                                                                                                              |            | DIVISION SOUTH ATLANTIC |                                                   | INSTALLATION VANNAH, GA.                                                                             |                              | SHEET 1 OF 1 SHEETS                                                                       |  |
|---------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |            |                         |                                                   | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5/16" fluted                                            |                              |                                                                                           |  |
| 2. LOCATION (Coordinates or Station) X-819096 Y-777170 GA. EAST                                                           |            |                         |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                       |                              |                                                                                           |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |            |                         |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314                                                  |                              |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-167                                                            |            |                         |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :5 :UNDISTURBED :0                             |                              |                                                                                           |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |            |                         |                                                   | 14. TOTAL NUMBER CORE BOXES 0                                                                        |                              |                                                                                           |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                         |                                                   | 15. ELEVATION GROUND WATER N/A                                                                       |                              |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 59.7' (WATER 42.6')                                                                            |            |                         |                                                   | 16. DATE HOLE :STARTED :24 JAN 92 :COMPLETED :24 JAN 92                                              |                              |                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |            |                         |                                                   | 17. ELEVATION TOP OF HOLE 0.0'                                                                       |                              |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE 59.7'                                                                                              |            |                         |                                                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                               |                              |                                                                                           |  |
|                                                                                                                           |            |                         |                                                   | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.                                                        |                              |                                                                                           |  |
| ELEVATION<br>0=0                                                                                                          | DEPTH<br>0 | LEGEND<br>z             | CLASSIFICATION OF MATERIALS<br>(Description)<br>s | % CORE<br>RECOV-<br>ERY<br>JAR                                                                       | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                           | 40         |                         | Water                                             |                                                                                                      |                              | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 45.1'.               |  |
| -42.6'                                                                                                                    | 45         |                         | (CH) Dark grey, fat CLAY. Some fine sand.         |                                                                                                      | 1                            | Weight of rods drove split spoon<br>from 42.6' to 44.7.                                   |  |
| -44.7'                                                                                                                    | 50         |                         | (SC) Grey, fine clayey SAND. Some silt.           |                                                                                                      | 2                            |                                                                                           |  |
|                                                                                                                           | 55         |                         |                                                   |                                                                                                      | 3                            |                                                                                           |  |
|                                                                                                                           | 60         |                         |                                                   |                                                                                                      | 4                            |                                                                                           |  |
| -59.7'                                                                                                                    | 60         |                         | Bottom of Boring 59.7'                            |                                                                                                      | 5                            |                                                                                           |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                          |            |                         |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>split spoon w/140 lb. hammer falling 30". |                              |                                                                                           |  |

Hole No. SM-100

| DRILLING LOG                                                                                                                 |              | VISOR<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                        |                                | SHEET 1<br>OF 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                         |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 3/4" fishtail        |                                |                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X-817468 Y-776786 GA. EAST                                                           |              |                         |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TSW or MSU)<br>MLW                    |                                |                                                                                                      |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                         |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314               |                                |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-168                                                            |              |                         |                                                                                                        | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN : 4 : UNDISTURBED : 0 |                                |                                                                                                      |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                         |                                                                                                        | 14. TOTAL NUMBER CORE BOXES : 0                                      |                                |                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                         |                                                                                                        | 15. ELEVATION GROUND WATER N/A                                       |                                |                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN : 53.5' (Water 40.7')                                                                             |              |                         |                                                                                                        | 16. DATE HOLE : STARTED : 25 JAN 92 : COMPLETED : 25 JAN 92          |                                |                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK : 0.0'                                                                                            |              |                         |                                                                                                        | 17. ELEVATION TOP OF HOLE : 0.0'                                     |                                |                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE : 53.5'                                                                                               |              |                         |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING : N/A                             |                                |                                                                                                      |  |
|                                                                                                                              |              |                         |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                     |                                |                                                                                                      |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOVERY                                                   | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g            |  |
|                                                                                                                              |              |                         | Water                                                                                                  |                                                                      |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.5'                                 |  |
|                                                                                                                              | 40.7'        |                         | Bottom of Harbor 40.7'                                                                                 |                                                                      |                                |                                                                                                      |  |
|                                                                                                                              | -40.7'       |                         | (MH) Very dark grey, clayey SILT.<br>Trace of fine to coarse sand.                                     |                                                                      | 1                              | 0                                                                                                    |  |
|                                                                                                                              | -43.8'       |                         | (CL) Dark grey, silty, lean CLAY. Some<br>fine sand. Trace of mica.                                    |                                                                      | 2                              | 37                                                                                                   |  |
|                                                                                                                              | -46.0'       |                         | (SC) Grey, fine clayey SAND.<br>Trace of silt, some mica.                                              |                                                                      | 3                              | 45                                                                                                   |  |
|                                                                                                                              | 50           |                         |                                                                                                        |                                                                      | 4                              | 77                                                                                                   |  |
|                                                                                                                              | 53.5'        |                         | Bottom of Boring 53.5'                                                                                 |                                                                      |                                | 70                                                                                                   |  |
|                                                                                                                              | 55           |                         | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                      |                                | 93                                                                                                   |  |
|                                                                                                                              | 60           |                         |                                                                                                        |                                                                      |                                | 76                                                                                                   |  |
|                                                                                                                              |              |                         |                                                                                                        |                                                                      |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>split spoon w/140 lb. hammer falling 30". |  |

NOTE: NO. 311 1000

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC                                                          |                                                                                                 | INSTALLATION<br>SAVANNAH, GA.                                                  |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                                                                                     |                                                                                                 | 10. SIZE AND TYPE OF BIT<br>1 3/8" splitspoon, 5/8" fishtail                   |                                |                                                                                                                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X=817466 Y=776799 GA. EAST                                                           |            |                                                                                     |                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                                |                                                                                                                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                                                                                     |                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                         |                                |                                                                                                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-168A                                                           |            |                                                                                     |                                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 2<br>UNDISTURBED : 0 |                                |                                                                                                                                                                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                                                                                     |                                                                                                 | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                                |                                                                                                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                                                                                     |                                                                                                 | 15. ELEVATION GROUND WATER<br>N/A                                              |                                |                                                                                                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>59.5' (Water 38.3')                                                                            |            |                                                                                     |                                                                                                 | 16. DATE HOLE<br>STARTED : 25 JAN 92<br>COMPLETED : 25 JAN 92                  |                                |                                                                                                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                                                                                     |                                                                                                 | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                                |                                                                                                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE<br>59.5'                                                                                              |            |                                                                                     |                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                                |                                                                                                                                                                                                        |  |
|                                                                                                                              |            |                                                                                     |                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                |                                                                                                                                                                                                        |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                                                                         | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                               | % CORE<br>RECOVERY<br>s                                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>s                                                                                                              |  |
|                                                                                                                              |            |                                                                                     | Water                                                                                           |                                                                                |                                |                                                                                                                                                                                                        |  |
|                                                                                                                              | 35         |                                                                                     | Bottom of Harbor 38.3'                                                                          |                                                                                |                                | Scale change at 35.0'. Set 6" diameter casing by own weight to 44.5'. Hole SH-168A is a companion log to SH-168 which was completed to 53.5' before moving barge out of the shipping lane for traffic. |  |
| -38.3'                                                                                                                       | 40         |                                                                                     | Wash (see remarks)                                                                              |                                                                                |                                | Cleaned out from 38.3' to 53.5' with 3/4" fishtail.                                                                                                                                                    |  |
|                                                                                                                              | 45         |                                                                                     |                                                                                                 |                                                                                |                                |                                                                                                                                                                                                        |  |
|                                                                                                                              | 50         |                                                                                     |                                                                                                 |                                                                                |                                |                                                                                                                                                                                                        |  |
| -53.5'                                                                                                                       | 55         |  | ISC1 Dark grey, fine clayey SAND. Trace of silt & mica.                                         |                                                                                | 1                              | 75                                                                                                                                                                                                     |  |
|                                                                                                                              |            |                                                                                     |                                                                                                 |                                                                                |                                | 62                                                                                                                                                                                                     |  |
|                                                                                                                              |            |                                                                                     |                                                                                                 |                                                                                |                                | 75                                                                                                                                                                                                     |  |
| -59.5'                                                                                                                       | 60         |                                                                                     | Bottom of Boring 59.5'                                                                          |                                                                                | 2                              | 57                                                                                                                                                                                                     |  |
|                                                                                                                              |            |                                                                                     | NOTE: Soil visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                                | BLOWS PER FOOT:<br><br>Number required to drive 1 3/8" I.D. splitspoon w/ 140 lb. hammer falling 30".                                                                                                  |  |

Hole No. 37-109

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                              | INSTALLATION<br>SAVANNAH, GA.                                                                    |                                | SHEET 1<br>OF 1 SHEETS                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                              | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                                     |                                |                                                                                          |  |
| 2. LOCATION (Coordinates or Station)<br>X-818211 Y-776659 GA. EAST                                                           |             |                            |                                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                                |                                                                                          |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                              | 12. MANUFACTURER'S DESIGNATION OF DREL<br>Failing 314                                            |                                |                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-169                                                            |             |                            |                                                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 5<br>UNDISTURBED : 0                   |                                |                                                                                          |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                              | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                                |                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                              | 15. ELEVATION GROUND WATER N/A                                                                   |                                |                                                                                          |  |
| 7. THICKNESS OF OVERBURDEN 60.3' (Water 40.8')                                                                               |             |                            |                                                              | 16. DATE HOLE<br>STARTED : 26 JAN 92<br>COMPLETED : 26 JAN 92                                    |                                |                                                                                          |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                              | 17. ELEVATION TOP OF HOLE 0.0'                                                                   |                                |                                                                                          |  |
| 9. TOTAL DEPTH OF HOLE 60.3'                                                                                                 |             |                            |                                                              | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                           |                                |                                                                                          |  |
|                                                                                                                              |             |                            |                                                              | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                                |                                                                                          |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>e            | % CORE<br>RECOVER-<br>Y<br>e                                                                     | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if applicable)<br>e |  |
|                                                                                                                              |             |                            | Water                                                        |                                                                                                  |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 41.7'.                    |  |
| -40.8'                                                                                                                       | 40          |                            | Bottom of Harbor 40.8'                                       |                                                                                                  |                                |                                                                                          |  |
| -43.8'                                                                                                                       | 45          |                            | (SC) Olive grey, fine clayey SAND. Some silt. Trace of mica. |                                                                                                  | 1                              | 22                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 38                                                                                       |  |
|                                                                                                                              |             |                            | Grey.                                                        |                                                                                                  | 2                              | 41                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 48                                                                                       |  |
| -48.3'                                                                                                                       | 50          |                            | Trace of silt.                                               |                                                                                                  | 3                              | 44                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 42                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  | 4                              | 52                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 54                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  | 5                              | 68                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 66                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 76                                                                                       |  |
|                                                                                                                              |             |                            |                                                              |                                                                                                  |                                | 82                                                                                       |  |
| -60.3'                                                                                                                       | 60          |                            | Bottom of Boring 60.3'                                       |                                                                                                  |                                | 76                                                                                       |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |             |                            |                                                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |                                |                                                                                          |  |

Hole No. SM-170

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISHTAIL |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=818643 Y=776483 GA. EAST                                                           |            |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314       |                                |                                                                                                  |  |
| 4. HOLE NO. (as shown on drawing title and file number)<br>SH-170                                                            |            |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>5              |                                | UNDISTURBED<br>0                                                                                 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>59.8' (Water 41.8')                                                                            |            |                            |                                                                                                  | 16. DATE HOLE<br>STARTED 17 NOV 91 COMPLETED 17 NOV 91       |                                |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>59.8'                                                                                              |            |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                                |                                                                                                  |  |
|                                                                                                                              |            |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                                |                                                                                                  |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | Z CORE<br>RECOV-<br>ERY<br>e                                 | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drifting time, water loss, depth of<br>weathering, etc., if significant)<br>f        |  |
|                                                                                                                              |            |                            | Water                                                                                            |                                                              |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.6'                             |  |
| -41.8'                                                                                                                       | 40         |                            | Bottom of Harbor 41.8'                                                                           |                                                              |                                |                                                                                                  |  |
| -44.8'                                                                                                                       | 45         |                            | (CL) Greenish-gray, silty lean CLAY. Trace of mica & fine sand.                                  |                                                              | 1                              | 20                                                                                               |  |
|                                                                                                                              |            |                            | (SC) Greenish-gray, fine clayey SAND. Some silt, trace of mica.                                  |                                                              | 2                              | 27                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              | 3                              | 42                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              | 4                              | 36                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              | 5                              | 30                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              |                                | 52                                                                                               |  |
| -59.8'                                                                                                                       | 60         |                            | Bottom of Boring 59.8'                                                                           |                                                              |                                | 42                                                                                               |  |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                                | 65                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              |                                | 60                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              |                                | 63                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              |                                | 80                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              |                                | 64                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30" |  |

Hole No. 37-171

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                      |                              | SHEET 1<br>OF 1 SHEETS                                                                        |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                   | 10. SIZE AND TYPE OF BIT<br>1 1/4" split spoon, 5/8" flight                                        |                              |                                                                                               |  |
| 2. LOCATION (Coordinates or Station)<br>X=817736 Y=776361 GA. EAST                                                           |            |                          |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                  |                              |                                                                                               |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                                              |                              |                                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-171                                                            |            |                          |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 6<br>UNDISTURBED : 0                     |                              |                                                                                               |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                   |                              |                                                                                               |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                   | 15. ELEVATION GROUND WATER<br>N/A                                                                  |                              |                                                                                               |  |
| 7. THICKNESS OF OVERBURDEN<br>60.5' (WATER 39.5')                                                                            |            |                          |                                                   | 16. DATE HOLE<br>STARTED : 14 DEC 91<br>COMPLETED : 14 DEC 91                                      |                              |                                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                          |                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                  |                              |                                                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                              |            |                          |                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                          |                              |                                                                                               |  |
|                                                                                                                              |            |                          |                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                   |                              |                                                                                               |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>s | % CORE<br>RECOVERY<br>ERY<br>JAR                                                                   | BOX OR<br>SAMPLE<br>NO.<br>r | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS |  |
|                                                                                                                              |            |                          | Water                                             |                                                                                                    |                              | Scale change of 35.0'.<br>Set 6" diameter casing by own weight to 45.7'.                      |  |
| -39.5'                                                                                                                       | 40         |                          | Bottom of Harbor 39.5'                            |                                                                                                    |                              |                                                                                               |  |
|                                                                                                                              |            |                          | (MH) Dark grey, clayey SILT.                      |                                                                                                    | 1                            | Weight of rods drove split spoon from 39.5' to 45.5'.<br>0                                    |  |
| -44.5'                                                                                                                       | 45         |                          | (SC) Dark grey, fine to medium clayey SAND.       |                                                                                                    | 2                            |                                                                                               |  |
| -45.5'                                                                                                                       |            |                          | (CH) Grey, fat CLAY. Some silt & fine sand.       |                                                                                                    | 3                            | 5                                                                                             |  |
|                                                                                                                              |            |                          |                                                   |                                                                                                    |                              | 5                                                                                             |  |
| -48.5'                                                                                                                       | 50         |                          | (SC) Grey, fine clayey SAND.                      |                                                                                                    | 4                            | 38                                                                                            |  |
|                                                                                                                              |            |                          |                                                   |                                                                                                    |                              | 49                                                                                            |  |
|                                                                                                                              |            |                          |                                                   |                                                                                                    |                              | 49                                                                                            |  |
|                                                                                                                              |            |                          |                                                   |                                                                                                    |                              | 56                                                                                            |  |
|                                                                                                                              | 55         |                          |                                                   |                                                                                                    | 5                            | 42                                                                                            |  |
|                                                                                                                              |            |                          |                                                   |                                                                                                    |                              | 48                                                                                            |  |
|                                                                                                                              |            |                          |                                                   |                                                                                                    |                              | 41                                                                                            |  |
| -60.5'                                                                                                                       | 60         |                          | Bottom of Boring 60.5'                            |                                                                                                    | 6                            | 44                                                                                            |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |            |                          |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/ 140 lb. hammer falling 30". |                              |                                                                                               |  |



H016 NO. 37-174

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLITSPOON, 5/8" FISHTAIL |                              |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-818054 Y-775978 GA. EAST                                                           |            |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                              |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-172                                                            |            |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | DISTURBED<br>4<br>UNDISTURBED<br>0                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                              |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                              |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>59.9' (Water 43.4')                                                                            |            |                          |                                                                                                  | 16. DATE HOLE                                                |                              | STARTED<br>25 JAN 92<br>COMPLETED<br>25 JAN 92                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                              |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>59.9'                                                                                              |            |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                              |                                                                                           |  |
|                                                                                                                              |            |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                           |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE<br>RECOVER-<br>Y<br>e                                 | BOX OR<br>SAMPLE<br>NO.<br>d | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              |            |                          | Water                                                                                            |                                                              |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.3'.                     |  |
|                                                                                                                              | 40         |                          | Bottom of Harbor 43.4'                                                                           |                                                              |                              | 0                                                                                         |  |
|                                                                                                                              | 45         |                          | (CL) Dark grey, silty lean CLAY. Some fine sand.                                                 |                                                              | 1                            | 27                                                                                        |  |
|                                                                                                                              |            |                          | Dark                                                                                             |                                                              |                              | 99                                                                                        |  |
|                                                                                                                              | 47.9'      |                          | (SC) Olive-grey, fine clayey SAND. Some silt, trace of mica.                                     |                                                              | 2                            | 32                                                                                        |  |
|                                                                                                                              |            |                          | Olive-grey.                                                                                      |                                                              |                              | 31                                                                                        |  |
|                                                                                                                              | 50         |                          |                                                                                                  |                                                              | 3                            | 90                                                                                        |  |
|                                                                                                                              |            |                          |                                                                                                  |                                                              |                              | 89                                                                                        |  |
|                                                                                                                              | 55         |                          |                                                                                                  |                                                              |                              | 100/0.6                                                                                   |  |
|                                                                                                                              |            |                          |                                                                                                  |                                                              |                              | 100/0.9                                                                                   |  |
|                                                                                                                              | 60         |                          |                                                                                                  |                                                              | 4                            | 90                                                                                        |  |
|                                                                                                                              |            |                          |                                                                                                  |                                                              |                              | 54                                                                                        |  |
|                                                                                                                              | 59.9'      |                          |                                                                                                  |                                                              |                              | 39                                                                                        |  |
|                                                                                                                              |            |                          | Bottom of Boring 59.9'                                                                           |                                                              |                              | BLOWS PER FOOT:                                                                           |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30".             |  |

HOLE NO. 37-173

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                     |                                      | SHEET 1<br>OF 1 SHEETS                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                   | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLIT SPOON, 5/2" FISHTAIL                                     |                                      |                                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X-818264 Y-775913 GA. EAST                                                           |              |                            |                                                   | 11. DATUM FOR ELEVATION SHOWN (FBM or MSL)<br>MLW                                                 |                                      |                                                                                                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                            |                                      |                                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-173                                                            |              |                            |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                        |                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                              |  |
|                                                                                                                              |              |                            |                                                   | DISTURBED<br>5                                                                                    |                                      | UNDISTURBED<br>0                                                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                                      |                                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                   | 15. ELEVATION GROUND WATER<br>N/A                                                                 |                                      |                                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN<br>59.8' (Water 44.4')                                                                            |              |                            |                                                   | 16. DATE HOLE<br>27 JAN 92                                                                        |                                      | 16. DATE HOLE<br>27 JAN 92                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                                      | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                       |  |
| 9. TOTAL DEPTH OF HOLE<br>59.8'                                                                                              |              |                            |                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                         |                                      | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                               |  |
|                                                                                                                              |              |                            |                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                                      |                                                                                                         |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVERY<br>+                                                                           | BOX OR<br>SAMPLE<br>NO.<br>OR<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS           |  |
|                                                                                                                              |              |                            | Water                                             |                                                                                                   |                                      | Scale change at 40.0'. Set 6" diameter casing by own weight to 48.2'.                                   |  |
|                                                                                                                              | 40           |                            |                                                   |                                                                                                   |                                      |                                                                                                         |  |
|                                                                                                                              | 44.4'        |                            | Bottom of Harbor 44.4'                            |                                                                                                   |                                      |                                                                                                         |  |
|                                                                                                                              | 45           |                            | (MH) Very dark grey to black clayey SILT.         |                                                                                                   | 1                                    | Weight of rods drove split spoon from 44.4' to 47.9'. Jar sample 2 taken from approx. 47.5' to 47.9'. 0 |  |
|                                                                                                                              | 47.5'        |                            | (SC) Dark grey, fine clayey SAND. Trace of silt.  |                                                                                                   | 2                                    |                                                                                                         |  |
|                                                                                                                              | 50           |                            |                                                   |                                                                                                   | 3                                    |                                                                                                         |  |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                   | 4                                    |                                                                                                         |  |
|                                                                                                                              | 59.8'        |                            | Bottom of Boring 59.8'                            |                                                                                                   | 5                                    | 100/0.9                                                                                                 |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                            |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |                                      |                                                                                                         |  |

HOLE NO. 371-1-T

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                  |                                  | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISHTAIL                   |                                  |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=818856 Y=775859 GA. EAST                                                           |             |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSU)<br>MLW                              |                                  |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                         |                                  |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-174                                                            |             |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 6<br>UNDISTURBED : 0 |                                  |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                                  |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                              |                                  |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>59.6' (Water 41.6')                                                                            |             |                            |                                                                                                  | 16. DATE HOLE<br>STARTED : 27 JAN 92<br>COMPLETED : 27 JAN 92                  |                                  |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                                  |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>59.6'                                                                                              |             |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                                  |                                                                                                  |  |
|                                                                                                                              |             |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                  |                                                                                                  |  |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0= | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                                        | BOX OR<br>SAMPLE<br>NO.<br>(JAR) | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If sign/lead)<br>BLOWS       |  |
|                                                                                                                              |             |                            | Water                                                                                            |                                                                                |                                  | Scale change at 40.0'. Set 6" diameter casing by own weight to 41.9'.                            |  |
|                                                                                                                              | 40          |                            | Bottom of Harbor 41.6'                                                                           |                                                                                |                                  |                                                                                                  |  |
| -41.6'                                                                                                                       |             |                            | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                                                                                | 1                                | 30                                                                                               |  |
| -43.1'                                                                                                                       |             |                            | (SM) Dark grey, fine silty SAND. Some clay & mica.                                               |                                                                                | 2                                | 76                                                                                               |  |
| -46.1'                                                                                                                       | 45          |                            | (SC) Grey, fine clayey SAND. Trace of silt.                                                      |                                                                                | 3                                | 49                                                                                               |  |
| -49.1'                                                                                                                       |             |                            | Dark grey.                                                                                       |                                                                                | 4                                | 34                                                                                               |  |
|                                                                                                                              | 50          |                            |                                                                                                  |                                                                                |                                  | 38                                                                                               |  |
|                                                                                                                              | 55          |                            |                                                                                                  |                                                                                | 5                                | 44                                                                                               |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                                                |                                  | 55                                                                                               |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                                                |                                  | 61                                                                                               |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                                                |                                  | 64                                                                                               |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                                                |                                  | 68                                                                                               |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                                                |                                  | 92                                                                                               |  |
| -59.6'                                                                                                                       | 60          |                            | Bottom of Boring 59.6'                                                                           |                                                                                | 6                                | 80                                                                                               |  |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                                  | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-175

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                   |                              | SHEET 1<br>OF 1 SHEETS                                                                             |    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------|----|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLITSPOON, 5/2" FISHTAIL    |                              |                                                                                                    |    |  |
| 2. LOCATION (Coordinates or Station)<br>X-818516 Y-775447 GA. EAST                                                           |              |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (FBM or NSL)<br>MLW               |                              |                                                                                                    |    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314          |                              |                                                                                                    |    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-175                                                            |              |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                      |                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                         |    |  |
|                                                                                                                              |              |                            |                                                                                                        | DISTURBED<br>5                                                  |                              | UNDISTURBED<br>0                                                                                   |    |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                                |                              |                                                                                                    |    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                               |                              |                                                                                                    |    |  |
| 7. THICKNESS OF OVERBURDEN<br>60.1' (Water 43.6')                                                                            |              |                            |                                                                                                        | 16. DATE HOLE<br>STARTED<br>17 NOV 91<br>COMPLETED<br>17 NOV 91 |                              |                                                                                                    |    |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                               |                              |                                                                                                    |    |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |              |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                       |                              |                                                                                                    |    |  |
|                                                                                                                              |              |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                |                              |                                                                                                    |    |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOV-<br>ERY<br>e                                    | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g          |    |  |
|                                                                                                                              | 40           |                            | Water                                                                                                  |                                                                 |                              | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 44.1'.                        |    |  |
| -43.6'                                                                                                                       |              |                            | Bottom of Harbor 43.6'                                                                                 |                                                                 |                              |                                                                                                    |    |  |
| -45.1'                                                                                                                       | 45           |                            | (SC) Greenish-grey, fine clayey<br>SAND. Some silt, trace of mica.<br>Light olive to greenish-grey.    |                                                                 | 1                            | 24                                                                                                 |    |  |
| -46.6'                                                                                                                       |              |                            |                                                                                                        |                                                                 |                              | 37                                                                                                 |    |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 |                              | 2                                                                                                  | 42 |  |
|                                                                                                                              | 50           |                            |                                                                                                        |                                                                 |                              |                                                                                                    | 42 |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 |                              | 3                                                                                                  | 49 |  |
|                                                                                                                              | 55           |                            | Greenish-grey.                                                                                         |                                                                 |                              | 74                                                                                                 |    |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 |                              | 50                                                                                                 |    |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 |                              | 57                                                                                                 |    |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 | 4                            | 77                                                                                                 |    |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 |                              | 77                                                                                                 |    |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                 | 5                            | 90                                                                                                 |    |  |
| -60.1'                                                                                                                       | 60           |                            | Bottom of Boring 60.1'                                                                                 |                                                                 |                              | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D.<br>spitapoon w/140 lb. hammer falling 30". |    |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                 |                              |                                                                                                    |    |  |

| DRILLING LOG                                                                                                                 |            | DIVISION                                                                             |                                              | INSTALLATION                 |                                | Hole No. <u>CS-1</u>                                                              |     |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------|----------------------------------------------|------------------------------|--------------------------------|-----------------------------------------------------------------------------------|-----|
| PROJECT<br><u>MINGS ISLAND TIKVING ASSIN</u>                                                                                 |            | <u>SOUTH ATLANTIC</u>                                                                |                                              | <u>SAVANNAH RIVER HARBOR</u> |                                | SHEET 1<br>OF 2 SHEETS                                                            |     |
| 2. LOCATION (Coordinates or Station) <u>OFFSHORE STA. 1001750</u>                                                            |            | 10. SIZE AND TYPE OF BIT <u>1 1/2" ID SPLITSPR</u>                                   |                                              |                              |                                |                                                                                   |     |
| 3. DRILLING AGENCY<br><u>SAVANNAH DISTRICT</u>                                                                               |            | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)<br><u>LL - IV</u>                         |                                              |                              |                                |                                                                                   |     |
| 4. HOLE NO. (As shown on drawing title and file number)<br><u>CS 1</u>                                                       |            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>SPROUSE &amp; HENWOOD</u>              |                                              |                              |                                |                                                                                   |     |
| 5. NAME OF DRILLER<br><u>C. Mc DONALD</u>                                                                                    |            | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED <u>5</u> UNDISTURBED <u>0</u> |                                              |                              |                                |                                                                                   |     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            | 14. TOTAL NUMBER CORE BOXES                                                          |                                              |                              |                                |                                                                                   |     |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |            | 15. ELEVATION GROUND WATER                                                           |                                              |                              |                                |                                                                                   |     |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |            | 16. DATE HOLE STARTED <u>3 MARCH 1973</u> COMPLETED <u>3 MARCH 1973</u>              |                                              |                              |                                |                                                                                   |     |
| 9. TOTAL DEPTH OF HOLE <u>45.1' BELOW MLL</u>                                                                                |            | 17. ELEVATION TOP OF HOLE <u>0.0' MLL</u>                                            |                                              |                              |                                |                                                                                   |     |
|                                                                                                                              |            | 18. TOTAL CORE RECOVERY FOR BORING <u>5</u>                                          |                                              |                              |                                |                                                                                   |     |
|                                                                                                                              |            | 19. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>                                 |                                              |                              |                                |                                                                                   |     |
| ELEVATION<br>+                                                                                                               | DEPTH<br>0 | LEGEND<br>+                                                                          | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVERY<br>+      | BOX OR<br>SAMPLE<br>NO.<br>100 | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |     |
|                                                                                                                              | 5          |                                                                                      | - WATER                                      |                              |                                |                                                                                   |     |
|                                                                                                                              | 10         |                                                                                      |                                              |                              |                                |                                                                                   |     |
| -13.6                                                                                                                        |            |                                                                                      | WATER DEPTH 13.6' BT MLL                     |                              |                                |                                                                                   |     |
|                                                                                                                              | 15         |                                                                                      | SM. GRAY SILTY FINE & MEDIUM SAND            |                              | 1                              |                                                                                   | 88  |
|                                                                                                                              | 20         |                                                                                      | W/ GREEN                                     |                              | 2                              |                                                                                   | 79  |
|                                                                                                                              | 25         |                                                                                      | OLIVE GREEN                                  |                              | 3                              |                                                                                   | 81  |
|                                                                                                                              | 30         |                                                                                      |                                              |                              | 4                              |                                                                                   | 68  |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 76  |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 84  |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 93  |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 100 |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 89  |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 63  |
|                                                                                                                              |            |                                                                                      |                                              |                              |                                |                                                                                   | 74  |

CONTINUED ON SHEET NO 2

| DRILLING LOG (Cont Sheet 3)  |       |        | Hole No. CS 1                                                                                 |                         |                         |                                                                                                     |
|------------------------------|-------|--------|-----------------------------------------------------------------------------------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
| PROJECT                      |       |        | INSTALLATION                                                                                  |                         |                         |                                                                                                     |
| KANSAS ILLINOIS TAPPING EXPT |       |        | SUNSHINE POWER PLANT                                                                          |                         |                         |                                                                                                     |
| ELEVATION                    | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| a                            | b     | c      | d                                                                                             | e                       | f                       | g                                                                                                   |
|                              |       |        | SM- OLIVE GREEN<br>SILTY FINE SAND                                                            |                         | 100                     |                                                                                                     |
|                              |       |        |                                                                                               |                         | 98                      |                                                                                                     |
|                              |       |        |                                                                                               |                         | 88                      |                                                                                                     |
|                              | 35    |        |                                                                                               |                         | 100                     |                                                                                                     |
|                              |       |        |                                                                                               |                         | 94                      |                                                                                                     |
|                              |       |        |                                                                                               |                         | 88                      |                                                                                                     |
|                              | 40    |        |                                                                                               | 5                       | 93                      |                                                                                                     |
|                              |       |        |                                                                                               |                         | 76                      |                                                                                                     |
|                              |       |        |                                                                                               |                         | 94                      |                                                                                                     |
|                              | 45    |        |                                                                                               |                         | 98                      |                                                                                                     |
|                              |       |        | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                         |                         |                                                                                                     |
|                              |       |        |                                                                                               |                         |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 1/2" ID splitspoon w/140 lb.<br>hammer falling 30" |

Hole No. CS-2

| DRILLING LOG                                                                                                                 |            | DIVISION    |                                                                   | INSTALLATION                                                              |                              | SHEET 1 OF 2 SHEETS                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|--|
| PROJECT<br><u>Kings Island Turning Basin</u>                                                                                 |            |             |                                                                   | 10. SIZE AND TYPE OF BIT<br><u>1" ID S.S. - 1/2" DIA.</u>                 |                              |                                                                                           |  |
| 2. LOCATION (Coordinates or Sec. no.) <u>100° NE of BN 16</u>                                                                |            |             |                                                                   | 11. DAY ON FOR ELEVATION SHOWN (TYPICAL - MWL)                            |                              |                                                                                           |  |
| 3. DRILLING AGENCY<br><u>San Juan Island Dist. 1</u>                                                                         |            |             |                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>Edwards &amp; Kellogg</u>   |                              |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><u>CS-2</u>                                                       |            |             |                                                                   | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                            |                              | 13. DISTURBED<br><u>9</u> UNDISTURBED                                                     |  |
| 5. NAME OF DRILLER<br><u>M. E. Dorn</u>                                                                                      |            |             |                                                                   | 14. TOTAL NUMBER CORE BOXES<br><u>0</u>                                   |                              |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             |                                                                   | 15. ELEVATION GROUND WATER<br><u>In River</u>                             |                              |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |            |             |                                                                   | 16. DATE HOLE<br>STARTED <u>5 April 1951</u> COMPLETED <u>11 April 51</u> |                              |                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |            |             |                                                                   | 17. ELEVATION TOP OF HOLE<br><u>0.0' M.L.W.</u>                           |                              |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br><u>45.0'</u>                                                                                       |            |             |                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br><u>1</u>                            |                              |                                                                                           |  |
|                                                                                                                              |            |             |                                                                   | 19. SIGNATURE OF INSPECTOR<br><u>Edward M. ...</u>                        |                              |                                                                                           |  |
| ELEVATION<br>e                                                                                                               | DEPTH<br>d | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                 | S CORE<br>RECOV-<br>ERY<br>e                                              | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              | 0'         |             |                                                                   |                                                                           | 1                            | Jan                                                                                       |  |
|                                                                                                                              | 5'         |             | Water                                                             |                                                                           |                              |                                                                                           |  |
|                                                                                                                              | 10'        |             |                                                                   |                                                                           |                              |                                                                                           |  |
|                                                                                                                              | 15'        |             |                                                                   |                                                                           |                              |                                                                                           |  |
|                                                                                                                              |            |             | Water depth 17.6' at M.L.W.                                       |                                                                           |                              |                                                                                           |  |
|                                                                                                                              |            |             | SP-Tan poorly graded Sand                                         |                                                                           | 1                            |                                                                                           |  |
|                                                                                                                              | 20'        |             | ML-Green & Gray fine<br>sandy silt micaceous<br>slight plasticity |                                                                           | 2                            |                                                                                           |  |
|                                                                                                                              |            |             |                                                                   |                                                                           | 3                            |                                                                                           |  |
|                                                                                                                              |            |             |                                                                   |                                                                           | 4                            |                                                                                           |  |
|                                                                                                                              | 25'        |             | SM-Green & Gray silty<br>fine sand micaceous<br>slight plasticity |                                                                           | 5                            |                                                                                           |  |
|                                                                                                                              |            |             |                                                                   |                                                                           |                              |                                                                                           |  |
|                                                                                                                              | 30'        |             |                                                                   |                                                                           |                              |                                                                                           |  |

| DRILLING LOG                                                                                                                |  | DIVISION | INSTALLATION                                                      | SHEET<br>OF |
|-----------------------------------------------------------------------------------------------------------------------------|--|----------|-------------------------------------------------------------------|-------------|
| 1. PROJECT<br><b>Kinas Island</b>                                                                                           |  |          | 10. SIZE AND TYPE OF BIT                                          |             |
| 2. LOCATION (Coordinates or Station)<br><b>See Plan</b>                                                                     |  |          | 11. DATUM FOR ELEVATION MEASUREMENT (FROM or MEAN)<br><b>L.L.</b> |             |
| 3. DRILLING AGENCY<br><b>Southern District</b>                                                                              |  |          | 12. MANUFACTURER'S DESIGNATION OF GRILL                           |             |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>C5-2</b>                                                      |  |          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br><b>5</b>             |             |
| 5. NAME OF DRILLER<br><b>McDonald</b>                                                                                       |  |          | 14. TOTAL NUMBER CORE BOXES<br><b>0</b>                           |             |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED      DEG. FROM VERT. |  |          | 15. ELEVATION GROUND WATER<br><b>In 100 ft</b>                    |             |
| 7. THICKNESS OF OVERBURDEN                                                                                                  |  |          | 16. DATE HOLE<br><b>STARTED 5 Apr 73 COMPLETED 11 Apr 73</b>      |             |
| 8. DEPTH DRILLED INTO ROCK                                                                                                  |  |          | 17. ELEVATION TOP OF HOLE<br><b>7.5' ± 12 L.W.</b>                |             |
| 9. TOTAL DEPTH OF HOLE <b>25.0'</b>                                                                                         |  |          | 18. TOTAL CORE RECOVERY FOR BORING<br><b>5'</b>                   |             |
| 19. SIGNATURE OF INSPECTOR<br><b>S. J. ...</b>                                                                              |  |          | 20. SIGNATURE OF INSPECTOR<br><b>S. J. ...</b>                    |             |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                      | CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                 |
|-----------|-------|--------|-----------------------------------------------------------------------------------|---------------|-------------------|---------------------------------------------------------------------------------------------------|
|           | 30'   |        |                                                                                   |               |                   |                                                                                                   |
|           | 35'   |        |                                                                                   |               | 6                 |                                                                                                   |
|           | 40'   |        |                                                                                   |               | 7                 |                                                                                                   |
|           | 45'   |        |                                                                                   |               | 8                 |                                                                                                   |
|           |       |        | ML-Green & Gray fine sand silt micaceous slight plasticity                        |               |                   |                                                                                                   |
|           |       |        | Soils field classified in accordance with the Unified Soil Classification System. |               |                   | <u>BLOWS PER FOOT:</u><br>Number required to drive 15" ID splitspoon w/140 lb hammer falling 30". |



| DRILLING LOG                                                                                                                 |  | DIVISION              | Hole No. CS-3                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|--|-----------------------|-------------------------------------------------------------------------------|--|
| 1. PROJECT<br><i>Kinnel Island</i>                                                                                           |  | <i>South Atlantic</i> | INSTALLATION<br><i>Savannah River</i>                                         |  |
| 2. LOCATION (Coordinates or Stationing) <i>Sta. 100000</i>                                                                   |  |                       | SHEET 1 OF 3 SH                                                               |  |
| 3. DRILLING AGENCY<br><i>Savannah District</i>                                                                               |  |                       | 10. SIZE AND TYPE OF BIT<br><i>MLW</i>                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><i>CS-3</i>                                                       |  |                       | 11. DATUM FOR ELEVATION SHOW WITHIN 100 FT.<br><i>MLW</i>                     |  |
| 5. NAME OF DRILLER<br><i>MS Driller</i>                                                                                      |  |                       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><i>...</i>                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                       | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN <i>6</i> DISTURBED UNDISTURBED |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |  |                       | 14. TOTAL NUMBER CORE BOXES <i>0</i>                                          |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |  |                       | 15. ELEVATION GROUND WATER <i>In River</i>                                    |  |
| 9. TOTAL DEPTH OF HOLE <i>41.9'</i>                                                                                          |  |                       | 16. DATE HOLE STARTED <i>19 April 73</i> COMPLETED <i>19 April 73</i>         |  |
|                                                                                                                              |  |                       | 17. ELEVATION TOP OF HOLE <i>0.0</i> <i>MLW</i>                               |  |
|                                                                                                                              |  |                       | 18. TOTAL CORE RECOVERY FOR BORING <i>1</i>                                   |  |
|                                                                                                                              |  |                       | 19. SIGNATURE OF INSPECTOR<br><i>...</i>                                      |  |

| ELEVATION<br>e | DEPTH<br>d | LEGEND<br>e | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|----------------|------------|-------------|-----------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
|                | 0'         |             |                                                                                               |                                | 1                            | <i>Casing set at 14.1'</i>                                                                |
|                | 5'         |             | <i>Water</i>                                                                                  |                                |                              |                                                                                           |
|                | 10'        |             | <i>Water depth 11.9' MLW</i>                                                                  |                                |                              |                                                                                           |
|                | 15'        |             |                                                                                               |                                | 2                            |                                                                                           |
|                | 20'        |             | <i>SM - Gray &amp; Green silty<br/>fine sand micaceous<br/>slight plasticity<br/>When Wet</i> |                                | 3                            |                                                                                           |
|                | 25'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 30'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 35'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 40'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 45'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 50'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 55'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 60'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 65'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 70'        |             |                                                                                               |                                |                              |                                                                                           |
|                | 75'        |             |                                                                                               |                                |                              |                                                                                           |

Hole No. CS-3

| DRILLING LOG                                            |       | DIVISION                                                                                             | INSTALLATION                                                                          | SHEET No        |                   |                                                                                                       |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------|
|                                                         |       | South ATLANTIC                                                                                       | Savannah River                                                                        | 1 OF 2 SH       |                   |                                                                                                       |
| 1. PROJECT                                              |       | Kinas Island Turning Basin                                                                           |                                                                                       |                 |                   |                                                                                                       |
| 2. LOCATION (Coordinates or Station)                    |       | See Plan                                                                                             |                                                                                       |                 |                   |                                                                                                       |
| 3. DRILLING AGENCY                                      |       | Savannah District                                                                                    |                                                                                       |                 |                   |                                                                                                       |
| 4. HOLE NO. (As shown on drawing title and file number) |       | CS-3                                                                                                 |                                                                                       |                 |                   |                                                                                                       |
| 5. NAME OF DRILLER                                      |       | M.E. Donald                                                                                          |                                                                                       |                 |                   |                                                                                                       |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                       |                 |                   |                                                                                                       |
| 7. THICKNESS OF OVERBURDEN                              |       |                                                                                                      |                                                                                       |                 |                   |                                                                                                       |
| 8. DEPTH DRILLED INTO ROCK                              |       |                                                                                                      |                                                                                       |                 |                   |                                                                                                       |
| 9. TOTAL DEPTH OF HOLE                                  |       | 146.5'                                                                                               |                                                                                       |                 |                   |                                                                                                       |
| 10. SIZE AND TYPE OF BIT                                |       | M.I.W.                                                                                               |                                                                                       |                 |                   |                                                                                                       |
| 11. DATUM FOR ELEVATION (SHOW WITHIN 100' OF HOLE)      |       | M.I.W.                                                                                               |                                                                                       |                 |                   |                                                                                                       |
| 12. MANUFACTURER'S DESIGNATION OF DRILL                 |       | Savannah & H. H. H. H.                                                                               |                                                                                       |                 |                   |                                                                                                       |
| 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN              |       | DISTURBED                                                                                            | UNDISTURBED                                                                           |                 |                   |                                                                                                       |
|                                                         |       | 6                                                                                                    |                                                                                       |                 |                   |                                                                                                       |
| 14. TOTAL NUMBER CORE BOXES                             |       | 0                                                                                                    |                                                                                       |                 |                   |                                                                                                       |
| 15. ELEVATION GROUND WATER                              |       | In River                                                                                             |                                                                                       |                 |                   |                                                                                                       |
| 16. DATE HOLE                                           |       | STARTED                                                                                              | COMPLETED                                                                             |                 |                   |                                                                                                       |
|                                                         |       | 19 Nov. 1973                                                                                         | 19 Dec. 1973                                                                          |                 |                   |                                                                                                       |
| 17. ELEVATION TOP OF HOLE                               |       | 0.0 at M.I.W.                                                                                        |                                                                                       |                 |                   |                                                                                                       |
| 18. TOTAL CORE RECOVERY FOR BORING                      |       | %                                                                                                    |                                                                                       |                 |                   |                                                                                                       |
| 19. SIGNATURE OF INSPECTOR                              |       | [Signature]                                                                                          |                                                                                       |                 |                   |                                                                                                       |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS<br>(Description)                                          | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                     |
|                                                         | 0'    |                                                                                                      |                                                                                       |                 | 4                 |                                                                                                       |
|                                                         | 30'   |                                                                                                      | SM - Gray & Green silty fine sand micaceous slight plasticity when Wet                |                 |                   |                                                                                                       |
|                                                         | 90'   |                                                                                                      |                                                                                       |                 | 5                 |                                                                                                       |
|                                                         | 95'   |                                                                                                      | cut out to top with fish tail                                                         |                 |                   |                                                                                                       |
|                                                         | 96'   |                                                                                                      | SM - Gray & Green silty fine sand micaceous                                           |                 | 6                 |                                                                                                       |
|                                                         |       |                                                                                                      | Soils field classification in accordance with the Unified Soil Classification System. |                 |                   | <b>BLOWS PER FOOT:</b><br>Number required to drive 1 1/2" ID split spoon w/140 lb hammer falling 30". |

Hole No. CS-4

| DRILLING LOG                                                        |       | DIVISION                                                    | INSTALLATION                              | SHEET 1<br>OF 2 SHEETS |                   |                                                                                |
|---------------------------------------------------------------------|-------|-------------------------------------------------------------|-------------------------------------------|------------------------|-------------------|--------------------------------------------------------------------------------|
| 1. PROJECT                                                          |       | <u>SOUTH ATLANTIC</u>                                       | <u>SAVANNAH RIVER HARBOR</u>              |                        |                   |                                                                                |
| 2. LOCATION (Coordinates or Station)                                |       | <u>WINGS ISLAND TURNING BASIN</u>                           |                                           |                        |                   |                                                                                |
| 3. DRILLING AGENCY                                                  |       | <u>75° 45' 00" N 75° 15' 00" W</u>                          |                                           |                        |                   |                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)             |       | <u>CS-4</u>                                                 |                                           |                        |                   |                                                                                |
| 5. NAME OF DRILLER                                                  |       | <u>STANNARD DISTRICT</u>                                    |                                           |                        |                   |                                                                                |
| 6. DIRECTION OF HOLE                                                |       | <u>FAIRING 314</u>                                          |                                           |                        |                   |                                                                                |
| <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |       | DES. FROM VERT.                                             |                                           |                        |                   |                                                                                |
| 7. THICKNESS OF OVERBURDEN                                          |       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                                           |                        |                   |                                                                                |
| 8. DEPTH DRILLED INTO ROCK                                          |       | DISTURBED <u>7</u> UNDISTURBED <u>0</u>                     |                                           |                        |                   |                                                                                |
| 9. TOTAL DEPTH OF HOLE                                              |       | 14. TOTAL NUMBER CORE BOXES                                 |                                           |                        |                   |                                                                                |
| <u>46.0' BELOW MSL</u>                                              |       | 15. ELEVATION GROUND WATER                                  |                                           |                        |                   |                                                                                |
| 16. DATE HOLE                                                       |       | STARTED <u>21 APRIL 1973</u> COMPLETED <u>22 APRIL 1973</u> |                                           |                        |                   |                                                                                |
| 17. ELEVATION TOP OF HOLE                                           |       | <u>0.0' MLLW</u>                                            |                                           |                        |                   |                                                                                |
| 18. TOTAL CORE RECOVERY FOR BORING                                  |       | <u>1</u>                                                    |                                           |                        |                   |                                                                                |
| 19. SIGNATURE OF INSPECTOR                                          |       | <u>John D. Dillie</u>                                       |                                           |                        |                   |                                                                                |
| ELEVATION                                                           | DEPTH | LEGEND                                                      | CLASSIFICATION OF MATERIALS (Description) | 3 CORE RECOVERY        | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                                     | 0     |                                                             |                                           |                        | 1                 | 18                                                                             |
|                                                                     | 5     |                                                             | SM-TAN SILTY FINE & MEDIUM SAND           |                        | 2                 | 10                                                                             |
|                                                                     | 10    |                                                             |                                           |                        | 3                 | 12                                                                             |
|                                                                     | 15    |                                                             |                                           |                        |                   | 18                                                                             |
|                                                                     | 20    |                                                             |                                           |                        |                   | 17                                                                             |
|                                                                     | 25    |                                                             |                                           |                        |                   | 19                                                                             |
|                                                                     | 30    |                                                             |                                           |                        |                   | 16                                                                             |
|                                                                     | 35    |                                                             |                                           |                        |                   | 20                                                                             |
|                                                                     | 40    |                                                             |                                           |                        |                   | 21                                                                             |
|                                                                     | 45    |                                                             |                                           |                        |                   | 22                                                                             |
|                                                                     | 50    |                                                             |                                           |                        |                   | 35                                                                             |
|                                                                     | 55    |                                                             |                                           |                        |                   | 30                                                                             |
|                                                                     | 60    |                                                             |                                           |                        |                   | 34                                                                             |
|                                                                     | 65    |                                                             |                                           |                        |                   | 26                                                                             |
|                                                                     | 70    |                                                             |                                           |                        |                   | 29                                                                             |
|                                                                     | 75    |                                                             |                                           |                        |                   | 36                                                                             |
|                                                                     | 80    |                                                             |                                           |                        |                   | 21                                                                             |
|                                                                     | 85    |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 90    |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 95    |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 100   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 105   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 110   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 115   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 120   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 125   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 130   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 135   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 140   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 145   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 150   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 155   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 160   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 165   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 170   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 175   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 180   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 185   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 190   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 195   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 200   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 205   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 210   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 215   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 220   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 225   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 230   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 235   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 240   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 245   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 250   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 255   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 260   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 265   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 270   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 275   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 280   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 285   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 290   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 295   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 300   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 305   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 310   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 315   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 320   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 325   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 330   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 335   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 340   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 345   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 350   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 355   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 360   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 365   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 370   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 375   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 380   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 385   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 390   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 395   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 400   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 405   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 410   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 415   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 420   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 425   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 430   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 435   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 440   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 445   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 450   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 455   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 460   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 465   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 470   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 475   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 480   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 485   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 490   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 495   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 500   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 505   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 510   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 515   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 520   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 525   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 530   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 535   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 540   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 545   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 550   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 555   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 560   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 565   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 570   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 575   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 580   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 585   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 590   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 595   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 600   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 605   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 610   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 615   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 620   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 625   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 630   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 635   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 640   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 645   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 650   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 655   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 660   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 665   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 670   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 675   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 680   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 685   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 690   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 695   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 700   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 705   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 710   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 715   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 720   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 725   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 730   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 735   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 740   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 745   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 750   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 755   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 760   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 765   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 770   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 775   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 780   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 785   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 790   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 795   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 800   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 805   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 810   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 815   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 820   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 825   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 830   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 835   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 840   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 845   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 850   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 855   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 860   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 865   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 870   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 875   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 880   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 885   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 890   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 895   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 900   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 905   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 910   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 915   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 920   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 925   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 930   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 935   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 940   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 945   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 950   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 955   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 960   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 965   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 970   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 975   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 980   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 985   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 990   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 995   |                                                             |                                           |                        |                   |                                                                                |
|                                                                     | 1000  |                                                             |                                           |                        |                   |                                                                                |

CONTINUED ON SHEET NO 2

| DRILLING LOG (Cont Sheet) |            |             | LOCATION TOP OF HOLE                                                                          |                                | Hole No.                     |                                                                                                              |
|---------------------------|------------|-------------|-----------------------------------------------------------------------------------------------|--------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------|
| PROJECT                   |            |             | INSTALLATION                                                                                  |                                | SHEET                        |                                                                                                              |
| KINGS ISLAND TRENCH BASIN |            |             | 0.3 BELOW MLLW<br>SAVUNAN RIVER HARBOR                                                        |                                | CS-4<br>OF 2 SHEETS          |                                                                                                              |
| ELEVATION<br>a            | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                    |
|                           |            |             | CH. GRAY FAT CLAY<br>SLIGHTLY MICACEOUS                                                       |                                |                              | BLOWS<br>51<br>49<br>41<br>68<br>61<br>59                                                                    |
|                           | 35         |             |                                                                                               |                                |                              |                                                                                                              |
|                           | 40         |             | SP. SM. GREEN POORLY<br>GRADED SAND                                                           |                                | 7                            | 71<br>72<br>68<br>59                                                                                         |
| -46.3                     | 45         |             |                                                                                               |                                |                              |                                                                                                              |
|                           |            |             | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                                |                              | <u>BLOWS PER FOOT:</u><br>Number required to drive<br>1 3/4" ID split spoon w/140 lb.<br>hammer falling 30". |

| DRILLING LOG                                   |       | DIVISION                                                                                       |                                           | PROJECT                                       |                   | SHEET                                                                          |  |
|------------------------------------------------|-------|------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| PROJECT                                        |       | SOUTH ATLANTIC                                                                                 |                                           | SVANNANH IER HARBOR                           |                   | OF 2 SHEETS                                                                    |  |
| LOCATION (Continuation of Station)             |       | KINGS ISLAND TURNING BASIN                                                                     |                                           | NO. HSE AND TYPE OF BIT 1 1/4" ID SPLITSPRINT |                   |                                                                                |  |
| DRILLING AGENCY                                |       | SAVANNAH DISTRICT                                                                              |                                           | 11. SAYON FOR ELEVATION (DOWN FROM) = MLW     |                   |                                                                                |  |
| HOLE NO. (As shown on drawing) and file number |       | CS 5                                                                                           |                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL       |                   | M.L.W.                                                                         |  |
| NAME OF DRILLER                                |       | J. MC DONALD                                                                                   |                                           | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN     |                   | 4 0                                                                            |  |
| DIRECTION OF HOLE                              |       | VERTICAL <input checked="" type="checkbox"/> INCLINED <input type="checkbox"/> DES. FROM VERT. |                                           | 14. TOTAL NUMBER CORE BOXES                   |                   |                                                                                |  |
| THICKNESS OF OVERBURDEN                        |       |                                                                                                |                                           | 15. ELEVATION GROUND WATER                    |                   |                                                                                |  |
| DEPTH DRILLED INTO ROCK                        |       |                                                                                                |                                           | 16. DATE HOLE                                 |                   | STARTED 26 APRIL 1973 COMPLETED 26 APRIL 1973                                  |  |
| TOTAL DEPTH OF HOLE                            |       | 45.9' BELOW MLW                                                                                |                                           | 17. ELEVATION TOP OF HOLE                     |                   | 0.0' MLW                                                                       |  |
|                                                |       |                                                                                                |                                           | 18. TOTAL CORE RECOVERY FOR BORING            |                   | 3                                                                              |  |
|                                                |       |                                                                                                |                                           | 19. SIGNATURE OF INSPECTOR                    |                   | Charles D. Griffin                                                             |  |
| ELEVATION                                      | DEPTH | LEGEND                                                                                         | CLASSIFICATION OF MATERIALS (Description) | SCORE RECOVERY                                | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
|                                                | 0     | WATER                                                                                          | WATER DEPTH 1.5' AT MLW                   |                                               |                   |                                                                                |  |
|                                                | 5     |                                                                                                | ML GRAY INORGANIC SILT                    |                                               |                   |                                                                                |  |
|                                                | 10    |                                                                                                |                                           |                                               |                   |                                                                                |  |
|                                                | 15    |                                                                                                |                                           |                                               |                   |                                                                                |  |
|                                                | 20    |                                                                                                |                                           |                                               |                   |                                                                                |  |
|                                                | 25    |                                                                                                | SM-TAN & GRAY SILTY FINE MEDIUM SAND      |                                               | 2                 |                                                                                |  |
|                                                | 30    |                                                                                                | CONTINUED ON SHEET NO. 2                  |                                               |                   |                                                                                |  |

| DRILLING LOG (Cont Sheet)                    |            | Hole No. <b>CS 5</b>                                                                                        |                                                   |
|----------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| PROJECT<br><b>KINGS ISLAND TURNING BASIN</b> |            | INSTALLATION<br><b>SALVAGE DIVISION</b>                                                                     |                                                   |
| ELEVATION<br>a                               | DEPTH<br>b | LEGEND<br>c                                                                                                 | CLASSIFICATION OF MATERIALS<br>(Description)<br>d |
|                                              | 35         |                            | <b>CL- GREEN &amp; GRAY<br/>SILTY SANDY CLAY</b>  |
|                                              | 40         |                            | <b>SP SM- GREEN<br/>POORLY GRADED<br/>SAND</b>    |
|                                              | 45         |                                                                                                             |                                                   |
|                                              |            | <b>NOTE: Soils field classified<br/>in accordance with the Unified<br/>Soil Classification System.</b>      |                                                   |
|                                              |            | <b>BLOWS PER FOOT:</b><br>Number required to drive<br>1 1/2" ID splitspoon w/140 lb.<br>hammer falling 30". |                                                   |

| DRILLING LOG                                                                                                           |  | DIVISION <u>SOUTH ATLANTIC</u>                                                  |  | INSTALLATION <u>SAVANNAH RIVER HARBOR</u>                |  | Hole No. <u>CS-6</u>              |  |
|------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------|--|----------------------------------------------------------|--|-----------------------------------|--|
| PROJECT <u>KINGS ISLAND TURNING BASIN</u>                                                                              |  | LOCATION (Coordinates or Station) <u>NORTH 50' OF BN 1A</u>                     |  | 10. SIZE AND TYPE OF BIT <u>1 7/8" ID SPLIT SPAN</u>     |  | SHEET <u>1</u> OF <u>2</u> SHEETS |  |
| DRILLING AGENCY <u>SAVANNAH DISTRICT</u>                                                                               |  | HOLE NO. (As shown on opening title and title number) <u>CS 6</u>               |  | 11. DATUM FOR ELEVATION SHOWN (Elev. or Ref.) <u>MLW</u> |  |                                   |  |
| NAME OF DRILLER <u>L. MC DONALD</u>                                                                                    |  | 12. MANUFACTURER'S DESIGNATION OF DRILL <u>FAIRING 314</u>                      |  | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN <u>4</u>       |  | UNDISTURBED <u>0</u>              |  |
| DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 14. TOTAL NUMBER CORE BOXES _____                                               |  | 15. ELEVATION GROUND WATER _____                         |  |                                   |  |
| THICKNESS OF OVERBURDEN _____                                                                                          |  | 16. DATE HOLE <u>27 APRIL 1973</u> STARTED <u>27 APRIL 1973</u> COMPLETED _____ |  | 17. ELEVATION TOP OF HOLE <u>0.0' MLW</u>                |  |                                   |  |
| DEPTH DRILLED INTO ROCK _____                                                                                          |  | 18. TOTAL CORE RECOVERY FOR BORING _____                                        |  | 19. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>     |  |                                   |  |
| TOTAL DEPTH OF HOLE <u>29.8' BELOW MLW</u>                                                                             |  |                                                                                 |  |                                                          |  |                                   |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)     | 1. CORE RECOVERY | 2. BOX OR SAMPLE NO. | 3. REMARKS (Drilling time, water loss, depth of monitoring, etc., if significant) |
|-----------|-------|--------|-----------------------------------------------|------------------|----------------------|-----------------------------------------------------------------------------------|
| 31.5      | 0     |        |                                               |                  |                      |                                                                                   |
|           | 5     |        | WATER                                         |                  |                      |                                                                                   |
|           | 10    |        |                                               |                  |                      |                                                                                   |
|           | 15    |        |                                               |                  |                      |                                                                                   |
| 26.5      | 16.5  |        | WATER DEPTH 16.5' AT MLW                      |                  |                      |                                                                                   |
|           | 20    |        | ML - GRAY INORGANIC SILT W/ SILTY SAND LAYERS |                  |                      |                                                                                   |
|           | 25    |        | CH - GRAY FAT CLAY W/ GRAVEL                  |                  | 2                    |                                                                                   |
|           | 30    |        | CONTINUED ON SHEET No. 2                      |                  | 3                    |                                                                                   |



| BILLING LOG (Cont. Sheet)  |       | LOCATION TOP OF HOLE |                                                                                               | Hole No.                |                         | SHEET 2 OF 2 SHEETS                                                                                  |  |
|----------------------------|-------|----------------------|-----------------------------------------------------------------------------------------------|-------------------------|-------------------------|------------------------------------------------------------------------------------------------------|--|
| QUEST.                     |       | INSTALLATION         |                                                                                               | REMARKS                 |                         |                                                                                                      |  |
| KINGS ISLAND TURNING BASIN |       | SAVANNAH RIVER       |                                                                                               | HARBOR                  |                         |                                                                                                      |  |
| LEVATION                   | DEPTH | LEGEND               | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOV.<br>EST | BOX OR<br>SAMPLE<br>NO. | (Drilling time, water loss, depth of<br>weathering, etc., if significant)                            |  |
|                            | 30    |                      | SM- GRAY SILTY FINE<br>MEDIUM SAND                                                            |                         |                         | BLOWS                                                                                                |  |
|                            |       |                      |                                                                                               |                         |                         | 21                                                                                                   |  |
|                            |       |                      |                                                                                               |                         |                         | 32                                                                                                   |  |
|                            |       |                      |                                                                                               |                         |                         | 34                                                                                                   |  |
|                            | 35    |                      |                                                                                               |                         |                         | 41                                                                                                   |  |
|                            |       |                      |                                                                                               |                         |                         | 40                                                                                                   |  |
|                            |       |                      |                                                                                               |                         |                         | 43                                                                                                   |  |
|                            | 40    |                      | GREEN, SLIGHTLY<br>MICACEOUS                                                                  |                         |                         | 46                                                                                                   |  |
|                            |       |                      |                                                                                               |                         |                         | 49                                                                                                   |  |
|                            |       |                      |                                                                                               |                         |                         | 51                                                                                                   |  |
|                            | 45    |                      |                                                                                               |                         |                         | 52                                                                                                   |  |
|                            | 46.5  |                      |                                                                                               |                         |                         | 56                                                                                                   |  |
|                            |       |                      | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                         |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 1/2" ID split spoon w/140 lb<br>hammer falling 30". |  |



| DRILLING LOG                                          |       | DIVISION        |                                               | INSTALLATION                                  |                   | Hole No.                                                                       |  |
|-------------------------------------------------------|-------|-----------------|-----------------------------------------------|-----------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| PROJECT                                               |       | SOVIET ATLANTIC |                                               | SAVANNAH R. ? HARBOR                          |                   | SHEET 1 OF 2 SHEETS                                                            |  |
| 1. LOCATION (Continuation of Division) SEE PLAN       |       | 2. DATE         |                                               | 10. SIZE AND TYPE OF BIT 1 7/8" 10 SPLUTSDOWN |                   | 11. DATUM FOR ELEVATION SHOWN (Elev. or Ref.)                                  |  |
| 3. LOCATION (Continuation of Division) SEE PLAN       |       | 4. DATE         |                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL       |                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                     |  |
| 4. HOLE NO. (As shown on drawing HHS and file number) |       | 5. DATE         |                                               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN    |                   | 14. TOTAL NUMBER CORE BOXES                                                    |  |
| 5. NAME OF DRILLER                                    |       | 6. DATE         |                                               | 14. TOTAL NUMBER CORE BOXES                   |                   | 15. ELEVATION GROUND WATER                                                     |  |
| 6. DIRECTION OF HOLE                                  |       | 7. DATE         |                                               | 15. DATE HOLE                                 |                   | 16. ELEVATION TOP OF HOLE                                                      |  |
| 7. THICKNESS OF OVERBURDEN                            |       | 8. DATE         |                                               | 16. ELEVATION TOP OF HOLE                     |                   | 17. TOTAL CORE RECOVERY FOR BORING                                             |  |
| 8. DEPTH DRILLED INTO ROCK                            |       | 9. DATE         |                                               | 17. TOTAL CORE RECOVERY FOR BORING            |                   | 18. SIGNATURE OF INSPECTOR                                                     |  |
| 9. TOTAL DEPTH OF HOLE                                |       | 10. DATE        |                                               | 18. SIGNATURE OF INSPECTOR                    |                   | 19. SIGNATURE OF INSPECTOR                                                     |  |
| ELEVATION                                             | DEPTH | LEGEND          | CLASSIFICATION OF MATERIALS (Description)     | % CORE RECOVERY                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| -0.8                                                  | 0     |                 | WATER DEPTH 0.8' AT MLW                       |                                               | 1                 | BLOWS                                                                          |  |
|                                                       | 5     |                 | ML - GRAY INORGANIC SILT W/ SILTY SAND LAYERS |                                               | 1                 |                                                                                |  |
|                                                       | 10    |                 |                                               |                                               | 1                 |                                                                                |  |
|                                                       | 15    |                 | CH - GRAY FAT CLAY W/ GRAVEL                  |                                               | 2                 |                                                                                |  |
|                                                       | 20    |                 | SM - GRAY SILTY FINE MEDIUM SAND              |                                               | 3                 |                                                                                |  |
|                                                       | 25    |                 |                                               |                                               | 3                 |                                                                                |  |
|                                                       | 30    |                 | GREEN, SLIGHTLY MICACEOUS                     |                                               | 4                 |                                                                                |  |
|                                                       |       |                 | CONTINUED ON SHEET 102                        |                                               |                   |                                                                                |  |

| RILLING LOG (Cont Sheet)   |       | LOCATION TOP OF HOLE  |                                                                                               | Hole No. <u>CS 7</u>        |                         |                                                                                                    |
|----------------------------|-------|-----------------------|-----------------------------------------------------------------------------------------------|-----------------------------|-------------------------|----------------------------------------------------------------------------------------------------|
| QUICK                      |       | INSTALLATION          |                                                                                               | SHEET: <u>2</u> OF 2 SHEETS |                         |                                                                                                    |
| KINGS ISLAND TURNING BASIN |       | SAYANAH RIVER HARBOUR |                                                                                               |                             |                         |                                                                                                    |
| LEVATION                   | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOV.<br>-ERY    | NO. OF<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)               |
|                            | 30    |                       |                                                                                               |                             |                         | 51                                                                                                 |
|                            |       |                       |                                                                                               |                             |                         | 54                                                                                                 |
|                            | 35    |                       | SM. GREEN SILTY FINE<br>SAND, SLIGHTLY<br>MICACEOUS                                           |                             |                         | 62                                                                                                 |
|                            |       |                       |                                                                                               |                             |                         | 64                                                                                                 |
|                            |       |                       |                                                                                               |                             |                         | 59                                                                                                 |
|                            | 40    |                       |                                                                                               |                             |                         | 61                                                                                                 |
|                            |       |                       |                                                                                               |                             |                         | 62                                                                                                 |
|                            |       |                       |                                                                                               |                             |                         | 60                                                                                                 |
|                            |       |                       |                                                                                               |                             |                         | 58                                                                                                 |
| 45.5                       | 45    |                       |                                                                                               |                             | 5                       | 51                                                                                                 |
|                            |       |                       | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                             |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 1/2" ID splitspoon w/140 lb<br>hammer falling 30" |

| DRILLING LOG                                         |       | DIVISION                                                                                             | INSTALLATION                               | Hole No.                               | SHEET             |                                                                                 |
|------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------|-------------------|---------------------------------------------------------------------------------|
| PROJECT                                              |       | South Atlantic                                                                                       | Installation                               | CS-8                                   | 1 OF 2 SHEETS     |                                                                                 |
| LOCATION (Coordinates or Station)                    |       | Opposite Sta. 98+330                                                                                 | 10. SIZE AND TYPE OF BIT                   | 1 1/4" ID S&W                          |                   |                                                                                 |
| LEAD AGENCY                                          |       | SAVANAUGH DISTRICT                                                                                   | 11. DATUM FOR ELEVATION SHOWN (BSM or MLL) | MLW                                    |                   |                                                                                 |
| HOLE NO. (As shown on drawing title and file number) |       | CS-8                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL    | 314 Failing                            |                   |                                                                                 |
| NAME OF DRILLER                                      |       | MS Doran II                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN  | 4                                      | UNDISTURBED       |                                                                                 |
| DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. | 14. TOTAL NUMBER CORE BOXES                | 0                                      |                   |                                                                                 |
| THICKNESS OF OVERBURDEN                              |       |                                                                                                      | 15. ESTIMATION GROUND WATER BORING IN PILE |                                        |                   |                                                                                 |
| DEPTH DRILLED INTO ROCK                              |       |                                                                                                      | 16. DATE HOLE                              | STARTED 30 April 73 COMPLETED 1 May 73 |                   |                                                                                 |
| TOTAL DEPTH OF HOLE                                  |       | 150'                                                                                                 | 17. ELEVATION TOP OF HOLE                  |                                        |                   |                                                                                 |
|                                                      |       |                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING         | 3                                      |                   |                                                                                 |
|                                                      |       |                                                                                                      | 19. SIGNATURE OF INSPECTOR                 | James J. McLaughlin                    |                   |                                                                                 |
| ELEVATION                                            | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)  | % CORE RECOVERY                        | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant) |
| 0                                                    | 0     |                                                                                                      |                                            |                                        |                   |                                                                                 |
| 5                                                    | 5     |                                                                                                      |                                            |                                        |                   |                                                                                 |
| 10                                                   | 10    |                                                                                                      |                                            |                                        |                   |                                                                                 |
| 15                                                   | 15    |                                                                                                      | Water                                      |                                        |                   |                                                                                 |
| 20                                                   | 20    |                                                                                                      |                                            |                                        |                   |                                                                                 |
| 25                                                   | 25    |                                                                                                      |                                            |                                        |                   |                                                                                 |
| 30                                                   | 30    |                                                                                                      | Depth at MLW + 30.0'                       |                                        |                   |                                                                                 |

| DRILLING LOG                                        |       | DIVISION                                                                       | INSTALLATION                                                                      |                                                                                                     | Hole No. <b>C5-8</b> |                                                                               |
|-----------------------------------------------------|-------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------|
| 1. PROJECT                                          |       | <b>South Atlantic</b>                                                          | 2. HOLE NO. (As shown on drawings and title number)                               |                                                                                                     | 3. DATE HOLE         |                                                                               |
| 2. LOCATION (Coordinates or Station)                |       | <b>See Plans</b>                                                               | 4. HOLE NO. (As shown on drawings and title number)                               |                                                                                                     | 5. DATE HOLE         |                                                                               |
| 3. DRILLING AGENCY                                  |       | <b>Edwards &amp; Kelcey, Inc.</b>                                              | 6. HOLE NO. (As shown on drawings and title number)                               |                                                                                                     | 7. DATE HOLE         |                                                                               |
| 4. HOLE NO. (As shown on drawings and title number) |       | <b>C5-8</b>                                                                    | 8. HOLE NO. (As shown on drawings and title number)                               |                                                                                                     | 9. DATE HOLE         |                                                                               |
| 5. NAME OF DRILLER                                  |       | <b>McDonnell</b>                                                               | 10. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 11. DATE HOLE        |                                                                               |
| 6. DIRECTION OF HOLE                                |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED | 12. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 13. DATE HOLE        |                                                                               |
| 7. THICKNESS OF OVERBURDEN                          |       |                                                                                | 14. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 15. DATE HOLE        |                                                                               |
| 8. DEPTH DRILLED INTO ROCK                          |       |                                                                                | 16. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 17. DATE HOLE        |                                                                               |
| 9. TOTAL DEPTH OF HOLE                              |       | <b>45.0'</b>                                                                   | 18. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 19. DATE HOLE        |                                                                               |
| 10. SIZE AND TYPE OF BIT                            |       | <b>1 1/2" ID Split Spoon</b>                                                   | 20. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 21. DATE HOLE        |                                                                               |
| 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)          |       | <b>N.W.</b>                                                                    | 22. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 23. DATE HOLE        |                                                                               |
| 12. MANUFACTURER'S DESIGNATION OF DRILL             |       | <b>314 F. 1. 1. 1. 1.</b>                                                      | 24. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 25. DATE HOLE        |                                                                               |
| 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN           |       | <b>6</b>                                                                       | 26. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 27. DATE HOLE        |                                                                               |
| 14. TOTAL NUMBER CORE BOXES                         |       | <b>0</b>                                                                       | 28. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 29. DATE HOLE        |                                                                               |
| 15. SUBSTRATE GROUND WATER                          |       | <b>Boring in River</b>                                                         | 30. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 31. DATE HOLE        |                                                                               |
| 16. DATE HOLE                                       |       | <b>30 Apr. 72</b>                                                              | 32. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 33. DATE HOLE        |                                                                               |
| 17. ELEVATION TOP OF HOLE                           |       |                                                                                | 34. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 35. DATE HOLE        |                                                                               |
| 18. TOTAL CORE RECOVERY FOR BORING                  |       | <b>1</b>                                                                       | 36. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 37. DATE HOLE        |                                                                               |
| 19. SIGNATURE OF INSPECTOR                          |       | <b>Edwards &amp; Kelcey, Inc.</b>                                              | 38. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 39. DATE HOLE        |                                                                               |
| 20. SIGNATURE OF INSPECTOR                          |       | <b>Edwards &amp; Kelcey, Inc.</b>                                              | 40. HOLE NO. (As shown on drawings and title number)                              |                                                                                                     | 41. DATE HOLE        |                                                                               |
| ELEVATION                                           | DEPTH | LEGEND                                                                         | CLASSIFICATION OF MATERIALS (Description)                                         | 1. CORE RECOVERY                                                                                    | 2. BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of measuring, etc., if significant) |
| 30                                                  | 30    |                                                                                | SM - Gray silty sand with layers dark gray OH                                     | 1                                                                                                   | 1                    | NX casing set at 33.4', advanced to 37.9'                                     |
| 35                                                  | 35    |                                                                                | SP - Gray poorly graded sand                                                      | 2                                                                                                   | 2                    |                                                                               |
| 40                                                  | 40    |                                                                                | SM - Green silty fine sand micaceous slight plasticity while wet                  | 3                                                                                                   | 3                    |                                                                               |
| 45                                                  | 45    |                                                                                | Soils field classified in accordance with the Unified Soil Classification System. | 4                                                                                                   | 4                    |                                                                               |
|                                                     |       |                                                                                |                                                                                   | <b>BLOWS PER FOOT:</b><br>Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30" |                      |                                                                               |

| DRILLING LOG                                            |       | DIVISION                                                                                       |                                                | INSTALLATION                               |                   | SHEET                                                                     |  |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------|-------------------|---------------------------------------------------------------------------|--|
| PROJECT                                                 |       | SOUTH ATLANTIC                                                                                 |                                                | S. Vannoy River                            |                   | OF 2 SHEETS                                                               |  |
| 1. LOCATION (Coordinates by Station)                    |       | Kings Island Turning Basin                                                                     |                                                | 10. SIZE AND TYPE OF BIT                   |                   | 1 3/4" ID Split Spoon                                                     |  |
| 2. APPROX. 25' FROM WATERS EDGE                         |       | Opposite 50.9400                                                                               |                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or ASL) |                   | M.L.W.                                                                    |  |
| 3. HOLE NO. (As shown on drawing title and file number) |       | CS-9                                                                                           |                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | S.L. Killion                                                              |  |
| 4. NAME OF DRILLER                                      |       | M.C. Donald                                                                                    |                                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                   | 6                                                                         |  |
| 5. DIRECTION OF HOLE                                    |       | VERTICAL <input checked="" type="checkbox"/> INCLINED <input type="checkbox"/> DES. FROM VERT. |                                                | 14. TOTAL NUMBER CORE BOXES                |                   | 0                                                                         |  |
| 6. THICKNESS OF OVERBURDEN                              |       |                                                                                                |                                                | 15. RECORDED GROUND WATER                  |                   | 20' In River                                                              |  |
| 7. DEPTH DRILLED INTO ROCK                              |       |                                                                                                |                                                | 16. DATE HOLE                              |                   | STARTED 2 May 73 COMPLETED 2 May 73                                       |  |
| 8. TOTAL DEPTH OF HOLE                                  |       | 45.4'                                                                                          |                                                | 17. ELEVATION TOP OF HOLE                  |                   |                                                                           |  |
|                                                         |       |                                                                                                |                                                | 18. TOTAL CORE RECOVERY FOR BORING         |                   | 3                                                                         |  |
|                                                         |       |                                                                                                |                                                | 19. SIGNATURE OF INSPECTOR                 |                   | E.R. J. M. [Signature]                                                    |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                                         | CLASSIFICATION OF MATERIALS (Description)      | CORE RECOVERY                              | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of water, etc., if significant) |  |
| 0'                                                      | 0'    |                                                                                                |                                                |                                            |                   |                                                                           |  |
| 5'                                                      | 5'    |                                                                                                |                                                |                                            |                   |                                                                           |  |
| 10'                                                     | 10'   |                                                                                                | Water                                          |                                            |                   |                                                                           |  |
| 15'                                                     | 15'   |                                                                                                |                                                |                                            |                   |                                                                           |  |
| 20'                                                     | 20'   |                                                                                                | Water depth 20.2' MLW<br>MH-Green elastic silt |                                            | 1                 |                                                                           |  |
| 25'                                                     | 25'   |                                                                                                | SP- Gray poorly graded Sand                    |                                            | 2                 | NX casing lost at 25.4'                                                   |  |
| 30'                                                     | 30'   |                                                                                                |                                                |                                            | 3                 | Advanced NX casing to 29.9'                                               |  |



| DRILLING LOG                                                   |       | DIVISION                                              | INSTALLATION                                                                              | FIGURE NO.          |                   | SHEET                                                            |  |
|----------------------------------------------------------------|-------|-------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|-------------------|------------------------------------------------------------------|--|
| PROJECT: <u>Kings Island Training Basin</u>                    |       | <u>South Atlantic</u>                                 | <u>Savannah River</u>                                                                     | <u>CS-9</u>         |                   | <u>2</u>                                                         |  |
| LOCATION (Coordinates or Station): <u>DL-9</u>                 |       | 10. SIZE AND TYPE OF BIT: <u>1 1/2" ID Split-Pipe</u> |                                                                                           | SHEET 2 OF 2 SHEETS |                   |                                                                  |  |
| 11. DATUM FOR ELEVATION SHOWN (TBM - MEAN): <u>196W</u>        |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 12. MANUFACTURER'S DESIGNATION OF DRILL: <u>3 1/2" F. Line</u> |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: <u>6</u>            |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 14. TOTAL NUMBER CORE BOXES: <u>0</u>                          |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 15. GROUND WATER: <u>20' in Pile</u>                           |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 16. DATE HOLE: <u>2 May 73</u>                                 |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 17. ELEVATION TOP OF HOLE: <u>2 May 73</u>                     |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 18. TOTAL CORE RECOVERY FOR BORING: <u>1</u>                   |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 19. SIGNATURE OF INSPECTOR: <u>Shirley M. ...</u>              |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| 20. TOTAL DEPTH OF HOLE: <u>45.4'</u>                          |       |                                                       |                                                                                           |                     |                   |                                                                  |  |
| ELEVATION                                                      | DEPTH | LEGEND                                                | CLASSIFICATION OF MATERIALS (Description)                                                 | SCORE RECOVERY      | BOX OR SAMPLE NO. | REMARKS                                                          |  |
| 206                                                            | 35'   |                                                       | SM - Gray silty fine sand                                                                 | 3                   |                   | Advanced N.Y. casing to 35'                                      |  |
|                                                                | 40'   |                                                       | Gray silty fine & medium sand 34.9' - 37.9' Green silty fine sand micaceous 37.9' - 45.4' | 5                   |                   | Blows per foot: 13" ID split pipe w/ 100 lb. hammer falling 50". |  |
|                                                                | 45'   |                                                       | Soils field classified in accordance with the Unified Soil Classification System.         | 6                   |                   |                                                                  |  |

| DRILLING LOG                                                                                                               |       | DIVISION                                                   | INSTALLATION                                                                     | SHEET         |                   |                                                                               |
|----------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------|----------------------------------------------------------------------------------|---------------|-------------------|-------------------------------------------------------------------------------|
| PROJECT                                                                                                                    |       | South Atlantic                                             | Savannah River                                                                   | 1 OF 2 SHEETS |                   |                                                                               |
| LOCATION (Coordinates of Station) <i>Opposite Sta. 1001500</i>                                                             |       | 10. SIZE AND TYPE OF BIT <i>1 3/8" ID Soft-Steel</i>       |                                                                                  |               |                   |                                                                               |
| ELEVATION <i>270' FROM WATERS EDGE</i>                                                                                     |       | 11. DATUM FOR ELEVATION SHOWN (TEN IN ALL) <i>M.L.W.</i>   |                                                                                  |               |                   |                                                                               |
| TILLING AGENCY <i>Savannah District</i>                                                                                    |       | 12. MANUFACTURER'S DESIGNATION OF DRILL <i>314 Failure</i> |                                                                                  |               |                   |                                                                               |
| 1. HOLE NO. (As shown on drawing title and life numbered) <i>CS-10</i>                                                     |       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN <i>7</i>        |                                                                                  |               |                   |                                                                               |
| 2. NAME OF DRILLER <i>McDonald</i>                                                                                         |       | 14. TOTAL NUMBER CORE BOXES <i>0</i>                       |                                                                                  |               |                   |                                                                               |
| 3. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED <i>DES. FROM VERT.</i> |       | 15. ELEVATION GROUND WATER <i>Boring In River</i>          |                                                                                  |               |                   |                                                                               |
| 7. THICKNESS OF OVERBURDEN                                                                                                 |       | 16. DATE HOLE <i>STARTED 3 May 73 COMPLETED 7 May 73</i>   |                                                                                  |               |                   |                                                                               |
| 8. DEPTH DRILLED INTO ROCK                                                                                                 |       | 17. ELEVATION TOP OF HOLE                                  |                                                                                  |               |                   |                                                                               |
| 9. TOTAL DEPTH OF HOLE <i>45.7'</i>                                                                                        |       | 18. TOTAL CORE RECOVERY FOR BORING                         |                                                                                  |               |                   |                                                                               |
|                                                                                                                            |       | 19. SIGNATURE OF INSPECTOR <i>Edward M. Land</i>           |                                                                                  |               |                   |                                                                               |
| ELEVATION                                                                                                                  | DEPTH | LEGEND                                                     | CLASSIFICATION OF MATERIALS (Description)                                        | CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of measuring, etc., if significant) |
| 0'                                                                                                                         | 0'    |                                                            |                                                                                  |               |                   |                                                                               |
| 5'                                                                                                                         | 5'    |                                                            | Water                                                                            |               |                   |                                                                               |
| 10'                                                                                                                        | 10'   |                                                            | Water depth 11.9' MLW                                                            |               |                   |                                                                               |
| 15'                                                                                                                        | 15'   |                                                            | MH-Green elastic silt                                                            |               |                   |                                                                               |
| 20'                                                                                                                        | 20'   |                                                            | SM-Gray silty fine & medium sand micaceous w/occasional small gravel 13.4'-17.9' |               |                   |                                                                               |
| 25'                                                                                                                        | 25'   |                                                            | 17.9'-45.7' Gray & Green silty fine sand micaceous                               |               |                   |                                                                               |
| 30'                                                                                                                        | 30'   |                                                            |                                                                                  |               |                   |                                                                               |

| DRILLING LOG                                                                      |       | DIVISION                                                 |                                           | ALLIANCE                                                                                         |                   | HOLE NO. <u>CS-10</u>                                                          |  | SHEET <u>2</u>                          |  |
|-----------------------------------------------------------------------------------|-------|----------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|-----------------------------------------|--|
| 1. PROJECT                                                                        |       | 2. LOCATION (Continuation of Station)                    |                                           | 10. SIZE AND TYPE OF BIT                                                                         |                   | 11. DATUM FOR ELEVATION SHOWN (TBM or ALL)                                     |  | 12. MANUFACTURER'S DESIGNATION OF DRILL |  |
| King's Island Turning Basin                                                       |       | 300 Plan                                                 |                                           | 1 3/4" ID Splitting                                                                              |                   | TBM                                                                            |  | 314 Failure                             |  |
| 3. DRILLING AGENCY                                                                |       | 4. HOLE NO. (As shown on drawing title) and title number |                                           | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                        |                   | 14. TOTAL NUMBER CORE BOXES                                                    |  | 15. ELEVATION GROUND WATER              |  |
| Savannah District                                                                 |       | CS-10                                                    |                                           | 7                                                                                                |                   | 0                                                                              |  | 800 ft. In River                        |  |
| 5. NAME OF DRILLER                                                                |       | 6. DIRECTION OF HOLE                                     |                                           | 16. DATE HOLE                                                                                    |                   | 17. ELEVATION TOP OF HOLE                                                      |  | 18. TOTAL CORE RECOVERY FOR BORING      |  |
| McDonald                                                                          |       | Vertical                                                 |                                           | 3 May 73                                                                                         |                   | 7 May 73                                                                       |  | 19. SIGNATURE OF INSPECTOR              |  |
| 7. THICKNESS OF OVERBURDEN                                                        |       | 8. DEPTH DRILLED INTO ROCK                               |                                           | 9. TOTAL DEPTH OF HOLE                                                                           |                   | 45.7'                                                                          |  | Edward Mulholland                       |  |
| ELEVATION                                                                         | DEPTH | LEGEND                                                   | CLASSIFICATION OF MATERIALS (Description) | SCORE RECOVERY                                                                                   | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |                                         |  |
| 30'                                                                               |       |                                                          |                                           |                                                                                                  |                   |                                                                                |  |                                         |  |
| 35'                                                                               |       |                                                          | SM-Gray & Green silty-fine sand micaceous |                                                                                                  |                   |                                                                                |  |                                         |  |
| 40'                                                                               |       |                                                          |                                           |                                                                                                  |                   |                                                                                |  |                                         |  |
| 45'                                                                               |       |                                                          |                                           |                                                                                                  |                   |                                                                                |  |                                         |  |
| Soils field classified in accordance with the Unified Soil Classification System. |       |                                                          |                                           | BLOCKS PER FOOT:<br>Number required to drive 1 3/4" ID split spoon w/140 lb. hammer falling 30". |                   |                                                                                |  |                                         |  |



HOLE NO. V-90A

| DRILLING LOG                                                                                                                 |       | South Atlantic |                                                                                   | Savannah, Ga.                                                           |                   | SHEETS 1                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                           |       |                |                                                                                   | 10. SIZE AND TYPE OF BIT<br>3-1/2" ID Sampler                           |                   |                                                                                |  |
| 2. LOCATION (Coordinates or Station)<br>Sta. 948, N. Side                                                                    |       |                |                                                                                   | 11. DATUM FOR ELEVATION SHOWN FORMULA/NO.                               |                   |                                                                                |  |
| 3. DRILLING AGENCY<br>Alpine Geophysical Assn.                                                                               |       |                |                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Aline 20' Vibro-Core Sampler |                   |                                                                                |  |
| 4. HOLE NO. (As shown on drawing note and file number)<br>V-90A                                                              |       |                |                                                                                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 0                        |                   |                                                                                |  |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                             |       |                |                                                                                   | 14. TOTAL NUMBER CORE BOXES<br>1 Plastic Tube                           |                   |                                                                                |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                   | 15. ELEVATION GROUND WATER<br>Tide Gage 6.3                             |                   |                                                                                |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |                |                                                                                   | 16. DATE HOLE<br>STARTED 5-24-67 COMPLETED 5-24-67                      |                   |                                                                                |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       |                |                                                                                   | 17. ELEVATION TOP OF HOLE<br>-36.7                                      |                   |                                                                                |  |
| 9. TOTAL DEPTH OF HOLE<br>7.5'                                                                                               |       |                |                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>71 %                              |                   |                                                                                |  |
|                                                                                                                              |       |                |                                                                                   | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                           |                   |                                                                                |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY                                                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| -35.0                                                                                                                        |       |                |                                                                                   |                                                                         |                   | Time Sec./Ft.                                                                  |  |
|                                                                                                                              |       |                | No Sample                                                                         |                                                                         |                   | Zone-of-Core-Loss 0.5                                                          |  |
| -40.0                                                                                                                        |       |                | SH-Green, micaceous, fine, silty sand.                                            | 71                                                                      | V-90A             | -36.7 to -38.9 0.5                                                             |  |
|                                                                                                                              |       |                | ML-Green, dense, sandy silt, toward a compaction shale                            | grading below                                                           | 43.0'             | 1.0                                                                            |  |
|                                                                                                                              |       |                | BOTTOM OF HOLE -44.2'                                                             |                                                                         |                   | 1.0                                                                            |  |
|                                                                                                                              |       |                | Soils field classified in accordance with the Unified Soil Classification System. |                                                                         |                   | 310/0.5 108                                                                    |  |

ONLY  
 108

| DRILLING LOG                                                                                                              |       | VISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                |                   | Hole No. 37-133                                                                                  |  | SHEET 1 OF 1 SHEETS |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------|--|---------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" splitspoon, 5/2" fishtail |                   |                                                                                                  |  |                     |  |
| 2. LOCATION (Coordinates or Station) X=816990 Y=780189 GA. EAST                                                           |       |                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW            |                   |                                                                                                  |  |                     |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 314       |                   |                                                                                                  |  |                     |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-155                                                            |       |                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                   | DISTURBED 6                                                                                      |  | UNDISTURBED 0       |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES                               |                   | 0                                                                                                |  |                     |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                                                  | 15. ELEVATION GROUND WATER                                |                   | N/A                                                                                              |  |                     |  |
| 7. THICKNESS OF OVERBURDEN 59.0' (Water 41.6')                                                                            |       |                       |                                                                                                  | 16. DATE HOLE                                             |                   | STARTED 15 NOV 91                                                                                |  | COMPLETED 15 NOV 91 |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                       |                                                                                                  | 17. ELEVATION TOP OF HOLE                                 |                   | 0.0'                                                                                             |  |                     |  |
| 9. TOTAL DEPTH OF HOLE 59.0'                                                                                              |       |                       |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING                        |                   | N/A                                                                                              |  |                     |  |
|                                                                                                                           |       |                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.             |                   |                                                                                                  |  |                     |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                           | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                   |  | BLOWS               |  |
| 0.0                                                                                                                       | 0     |                       |                                                                                                  |                                                           |                   |                                                                                                  |  |                     |  |
|                                                                                                                           | 40    |                       | Water                                                                                            |                                                           |                   | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.3'.                            |  |                     |  |
|                                                                                                                           |       |                       | Bottom of Harbor 41.6'                                                                           |                                                           |                   |                                                                                                  |  |                     |  |
| -41.6'                                                                                                                    |       |                       | (SM) Gray, fine, silty SAND, trace of mica.                                                      |                                                           | 1                 |                                                                                                  |  |                     |  |
|                                                                                                                           |       |                       | (SC) Greenish-gray, fine clayey SAND. Trace of mica.                                             |                                                           | 2                 | Weight of hammer drive splitspoon to 42.3'. Jar 1 from 41.6' to approx. 42.0'.                   |  | 21                  |  |
| -44.6'                                                                                                                    | 45    |                       | Trace of fine to coarse gravel.                                                                  |                                                           |                   |                                                                                                  |  | 42                  |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                           |                   |                                                                                                  |  | 22                  |  |
| -47.6'                                                                                                                    |       |                       |                                                                                                  |                                                           | 3                 |                                                                                                  |  | 35                  |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                           |                   |                                                                                                  |  | 41                  |  |
|                                                                                                                           | 50    |                       | No gravel.                                                                                       |                                                           |                   |                                                                                                  |  | 26                  |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                           | 4                 |                                                                                                  |  | 43                  |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                           |                   |                                                                                                  |  | 51                  |  |
|                                                                                                                           | 55    |                       |                                                                                                  |                                                           |                   |                                                                                                  |  | 47                  |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                           | 5                 |                                                                                                  |  | 86                  |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                           |                   |                                                                                                  |  | 100/0.8             |  |
| -59.0'                                                                                                                    |       |                       | (SM) Gray, fine silty SAND. Trace of mica.                                                       |                                                           | 6                 |                                                                                                  |  | 100/0.4             |  |
|                                                                                                                           | 60    |                       | Bottom of Boring 59.0'                                                                           |                                                           |                   |                                                                                                  |  |                     |  |
|                                                                                                                           |       |                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30". |  |                     |  |

| DRILLING LOG                                                                                                              |       | "ISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                             |                  | SHEET 1 OF 1 SHEETS                                                                              |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" splitspoon, 5 1/2" fishtail            |                  |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station) X=816798 Y=779692 GA. EAST                                                           |       |                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                         |                  |                                                                                                  |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314                    |                  |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-156                                                            |       |                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED 6 :UNDISTURBED 0 |                  |                                                                                                  |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                          |                  |                                                                                                  |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                         |                  |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 59.6' (Water 41.7')                                                                            |       |                       |                                                                                                  | 16. DATE HOLE STARTED 15 DEC 91 COMPLETED 15 DEC 91                    |                  |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                       |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                         |                  |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.6'                                                                                              |       |                       |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                                 |                  |                                                                                                  |  |
|                                                                                                                           |       |                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.                          |                  |                                                                                                  |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                                        | BOX OR SAMPLE NO | REMARKS (Drilling time, water loss, depth of weathering, etc., if splitspoon)                    |  |
| 0.0                                                                                                                       | 0     | c                     | d                                                                                                | e                                                                      | UAR              | g BLOWS                                                                                          |  |
|                                                                                                                           |       |                       | Water                                                                                            |                                                                        |                  | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.3'.                            |  |
| 40                                                                                                                        |       |                       | Bottom of Harbor 41.7'                                                                           |                                                                        |                  |                                                                                                  |  |
| -41.7'                                                                                                                    |       |                       | (SM) Grey, fine silty SAND. Trace of mica.                                                       |                                                                        | 1                | 45                                                                                               |  |
| -43.2'                                                                                                                    |       |                       | (SC) Grey, fine clayey SAND. Trace of silt & mica.                                               |                                                                        | 2                | 38                                                                                               |  |
| -44.7'                                                                                                                    |       |                       | Occasional layer of fine silty sand up to 0.3' thick.                                            |                                                                        |                  | 62                                                                                               |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                                        | 3                | 43                                                                                               |  |
| -49.2'                                                                                                                    |       |                       | No silty sand layers.                                                                            |                                                                        |                  | 61                                                                                               |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                                        | 4                | 35                                                                                               |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                                        | 5                | 37                                                                                               |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                                        |                  | 43                                                                                               |  |
|                                                                                                                           |       |                       |                                                                                                  |                                                                        | 6                | 56                                                                                               |  |
| -58.2'                                                                                                                    |       |                       | Some silt.                                                                                       |                                                                        |                  | 64                                                                                               |  |
| -59.6'                                                                                                                    |       |                       |                                                                                                  |                                                                        |                  | 56                                                                                               |  |
|                                                                                                                           |       |                       | Bottom of Boring 59.6'                                                                           |                                                                        |                  | 100/0.0'                                                                                         |  |
|                                                                                                                           |       |                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                        |                  | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-15 /

| DRILLING LOG                                                                                                                 |              | VISION SOUTH ATLANTIC |                                                                                                       | INSTALLATION IVANNAH, GA.                                 |                                | SHEET 1 OF 1 SHEETS                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                       |                                                                                                       | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/8" fishtail |                                |                                                                                                                                                    |  |
| 2. LOCATION (Coordinates or Station)<br>X-817067 Y-779191 GA. EAST                                                           |              |                       |                                                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                                                                                    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                       |                                                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314    |                                |                                                                                                                                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-157                                                            |              |                       |                                                                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                                                         |  |
|                                                                                                                              |              |                       |                                                                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                                                         |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                       |                                                                                                       | 14. TOTAL NUMBER CORE BOXES                               |                                | 14. TOTAL NUMBER CORE BOXES                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                       |                                                                                                       | 15. ELEVATION GROUND WATER N/A                            |                                | 15. ELEVATION GROUND WATER N/A                                                                                                                     |  |
|                                                                                                                              |              |                       |                                                                                                       | 16. DATE HOLE                                             |                                | 16. DATE HOLE                                                                                                                                      |  |
|                                                                                                                              |              |                       |                                                                                                       | 16. DATE HOLE                                             |                                | 16. DATE HOLE                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 59.6' (Water 38.6')                                                                               |              |                       |                                                                                                       | 17. ELEVATION TOP OF HOLE 0.0'                            |                                | 17. ELEVATION TOP OF HOLE 0.0'                                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                       |                                                                                                       | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                                | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                                                                             |  |
| 9. TOTAL DEPTH OF HOLE 59.6'                                                                                                 |              |                       |                                                                                                       | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                                                                   |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                          | % CORE<br>RECOVER-<br>ERY                                 | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if applicable)                                                                |  |
|                                                                                                                              |              |                       | Water                                                                                                 |                                                           |                                | Scaler change at 35.0'.<br>Set 6" diameter casing by own<br>weight to 43.0'.                                                                       |  |
|                                                                                                                              |              |                       | Bottom of Harbor 38.6'                                                                                |                                                           |                                |                                                                                                                                                    |  |
|                                                                                                                              |              |                       | (SP) Tan, poorly graded, coarse SAND.                                                                 |                                                           | 1                              | Weight of rods drove splitspoon<br>to 40.1'. Had no recovery, redrove<br>to 40.1' then cont'd. drive to<br>41.6'. Sample 1 from 38.6' to<br>41.6'. |  |
|                                                                                                                              |              |                       | Some fine gravel.                                                                                     |                                                           |                                |                                                                                                                                                    |  |
|                                                                                                                              |              |                       | (CL) Grey, silty, lean CLAY. Some fine sand,<br>trace of mica.                                        |                                                           | 2                              |                                                                                                                                                    |  |
|                                                                                                                              |              |                       |                                                                                                       |                                                           | 3                              |                                                                                                                                                    |  |
|                                                                                                                              |              |                       |                                                                                                       |                                                           | 4                              |                                                                                                                                                    |  |
|                                                                                                                              |              |                       | (SC) Grey, fine clayey SAND. Some silt,<br>trace of mica.                                             |                                                           | 5                              |                                                                                                                                                    |  |
|                                                                                                                              |              |                       | Bottom of Boring 59.6'                                                                                |                                                           |                                |                                                                                                                                                    |  |
|                                                                                                                              |              |                       | NOTE: Soils visually field classified in<br>accordance with the United Soil Classification<br>System. |                                                           |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30".                                                |  |

HOLE NO. V-90A

| DRILLING LOG                                                                                                                 |       | South Atlantic |                                                                                   | Savannah, Ga.                                                           |                   | Sheet 1 of 1                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                           |       |                |                                                                                   | 10. SIZE AND TYPE OF BIT<br>3-1/2" ID Sampler                           |                   |                                                                                   |  |
| 2. LOCATION (Continuation of Form)<br>Sta. 94B, N. Side                                                                      |       |                |                                                                                   | 11. DASH FOR ELEVATION SHOWN FORMERLY                                   |                   |                                                                                   |  |
| 3. DRILLING AGENCY<br>Alpine Geophysical Asso.                                                                               |       |                |                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine 20' Vibratory Sampler |                   |                                                                                   |  |
| 4. HOLE NO. (As shown on drawing hole and file number)<br>V-90A                                                              |       |                |                                                                                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 0                        |                   |                                                                                   |  |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                             |       |                |                                                                                   | 14. TOTAL NUMBER CORE HOLES<br>1 Plastic Tube                           |                   |                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                   | 15. ELEVATION GROUND WATER<br>Tide Gage 6.3                             |                   |                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |                |                                                                                   | 16. DATE HOLE<br>STARTED 5-24-67 COMPLETED 5-24-67                      |                   |                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       |                |                                                                                   | 17. ELEVATION TOP OF HOLE<br>-36.7                                      |                   |                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>7.5'                                                                                               |       |                |                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>71 %                              |                   |                                                                                   |  |
|                                                                                                                              |       |                |                                                                                   | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                           |                   |                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                      | % CORE RECOVERY                                                         | NO. OF SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of overburden, etc., if significant) |  |
| -35.0                                                                                                                        |       |                |                                                                                   |                                                                         |                   | Time Sec./Ft.                                                                     |  |
|                                                                                                                              |       |                | No Sample                                                                         |                                                                         |                   | Zone-of-Core-Loss 0.5                                                             |  |
| -40.0                                                                                                                        |       |                | SM-Green, micaceous, fine, silty sand.                                            | 71                                                                      | V-90A             | -36.7 to -38.9 0.5                                                                |  |
|                                                                                                                              |       |                | ML-Green, dense, sandy silt, toward a compaction shale                            | grading below                                                           | -43.0'            | 1.0                                                                               |  |
|                                                                                                                              |       |                | BOTTOM OF HOLE -44.2'                                                             |                                                                         |                   | 1.0                                                                               |  |
|                                                                                                                              |       |                | Soils field classified in accordance with the Unified Soil Classification System. |                                                                         |                   | 310/0.3 108                                                                       |  |

ONLY

# SAVANNAH HARBOR BORING LOGS

From Station 79+000

To

Station 97+750

| DRILLING LOG                                            |             |             | DIVISION                                                                                             |                              | INSTALLATION                                   |                                                                                                     | Hole No. SH-23                                 |  |
|---------------------------------------------------------|-------------|-------------|------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------|--|
| 1. PROJECT                                              |             |             | South Atlantic                                                                                       |                              | Savannah, GA                                   |                                                                                                     | SHEET 1<br>OF 2 SHEETS                         |  |
| 2. LOCATION (Coordinates or Station)                    |             |             | See Plan Sta 96+500, E of CL, Range 38                                                               |                              | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon  |                                                                                                     |                                                |  |
| 3. DRILLING AGENCY                                      |             |             | Savannah District                                                                                    |                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)     |                                                                                                     | MLW                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number) |             |             | SH-23                                                                                                |                              | 12. MANUFACTURER'S DESIGNATION OF DRILL        |                                                                                                     | CME 75                                         |  |
| 5. NAME OF FILLER                                       |             |             | T. W. Scott                                                                                          |                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN |                                                                                                     | DISTURBED<br>5<br>UNDISTURBED<br>0             |  |
| 6. DIRECTION OF HOLE                                    |             |             | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                              | 14. TOTAL NUMBER CORE BOXES                    |                                                                                                     |                                                |  |
| 7. THICKNESS OF OVERBURDEN                              |             |             | 56.0'                                                                                                |                              | 15. ELEVATION GROUND WATER                     |                                                                                                     |                                                |  |
| 8. DEPTH DRILLED INTO ROCK                              |             |             | 0.0'                                                                                                 |                              | 16. DATE HOLE                                  |                                                                                                     | STARTED<br>26 Nov 77<br>COMPLETED<br>26 Nov 77 |  |
| 9. TOTAL DEPTH OF HOLE                                  |             |             | -56.0' MLW                                                                                           |                              | 17. ELEVATION TOP OF HOLE                      |                                                                                                     | 0.0 MLW                                        |  |
|                                                         |             |             |                                                                                                      |                              | 18. TOTAL CORE RECOVERY FOR BORING             |                                                                                                     | 5                                              |  |
|                                                         |             |             |                                                                                                      |                              | 19. SIGNATURE OF INSPECTOR                     |                                                                                                     | CHARLES D. GRIFFIN                             |  |
| ELEVATION<br>0.0                                        | DEPTH<br>0' | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                    | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f                   | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |                                                |  |
|                                                         | 5'          |             | Water                                                                                                |                              |                                                |                                                                                                     |                                                |  |
|                                                         | 10'         |             |                                                                                                      |                              |                                                |                                                                                                     |                                                |  |
|                                                         | 15'         |             |                                                                                                      |                              |                                                |                                                                                                     |                                                |  |
|                                                         | 20'         |             |                                                                                                      |                              |                                                |                                                                                                     |                                                |  |
|                                                         | 25'         |             |                                                                                                      |                              |                                                |                                                                                                     |                                                |  |
|                                                         | 30'         |             |                                                                                                      |                              |                                                |                                                                                                     |                                                |  |
| -30.0                                                   |             |             | continued on sheet 2                                                                                 |                              |                                                |                                                                                                     |                                                |  |
|                                                         |             |             | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.        |                              | B-52                                           | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |                                                |  |

| DRILLING LOG (Cont Sheet) |       | LOCATION TOP OF HOLE |                                                                   | Hole No.           |                         | SH-23                                                                               |       |
|---------------------------|-------|----------------------|-------------------------------------------------------------------|--------------------|-------------------------|-------------------------------------------------------------------------------------|-------|
| PROJECT                   |       | INSTALLATION         |                                                                   | SHEET              |                         | 2                                                                                   |       |
| Savannah Harbor           |       | Savannah, GA         |                                                                   | OF 2 SHEETS        |                         |                                                                                     |       |
| ELEVATION                 | DEPTH | LOG                  | CLASSIFICATION OF MATERIALS<br>(Description)                      | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant) |       |
| a                         | b     | c                    | d                                                                 | e                  | JAR                     | g                                                                                   | Blows |
| -30.5                     | 30'   |                      | Bottom of River -30.5'                                            |                    | 1                       |                                                                                     | 16    |
|                           |       |                      | SP - Tan poorly graded sand                                       |                    |                         |                                                                                     | 12    |
|                           | 35'   |                      |                                                                   |                    | 2                       |                                                                                     | 14    |
|                           |       |                      | Tan and gray                                                      |                    |                         |                                                                                     | 21    |
|                           |       |                      |                                                                   |                    |                         |                                                                                     | 32    |
|                           | 40'   |                      |                                                                   |                    |                         |                                                                                     | 40    |
| -41.0                     |       |                      |                                                                   |                    |                         |                                                                                     | 58    |
|                           |       |                      |                                                                   |                    | 3                       |                                                                                     | 71    |
|                           |       |                      | MH - Dark green hard clayey<br>silt interbedded with fine<br>sand |                    |                         |                                                                                     | 79    |
|                           | 45'   |                      |                                                                   |                    |                         |                                                                                     | 83    |
|                           |       |                      |                                                                   |                    |                         |                                                                                     | 94    |
|                           |       |                      |                                                                   |                    | 4                       |                                                                                     | 100/0 |
|                           | 50'   |                      |                                                                   |                    |                         |                                                                                     | 91    |
|                           |       |                      |                                                                   |                    |                         |                                                                                     | 93    |
|                           |       |                      |                                                                   |                    |                         |                                                                                     | 96    |
|                           |       |                      |                                                                   |                    |                         |                                                                                     | 100   |
| -56.0                     | 55'   |                      |                                                                   |                    | 5                       |                                                                                     | 98    |
|                           |       |                      | Bottom of hole -56.0' MLW                                         |                    |                         |                                                                                     |       |

B-60

B-60



Hole No. SH-23

| DRILLING LOG                                                                                                                 |             | DIVISION       | INSTALLATION                                                                                  |                                | SHEET 1<br>OF 2 SHEETS       |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-----------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |             | South Atlantic | Savannah, GA                                                                                  |                                |                              |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 96+500, E of CL, Range 38                                               |             |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon                                                 |                                |                              |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                             |                                |                              |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-23                                                             |             |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                             |                                |                              |                                                                                                     |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |             |                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                |                                | DISTURBED<br>5               | UNDISTURBED<br>0                                                                                    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                | 14. TOTAL NUMBER CORE BOXES                                                                   |                                |                              |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN<br>56.0'                                                                                          |             |                | 15. ELEVATION GROUND WATER                                                                    |                                |                              |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                | 16. DATE HOLE                                                                                 |                                | STARTED<br>26 Nov 77         | COMPLETED<br>26 Nov 77                                                                              |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW                                                                                         |             |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                          |                                |                              |                                                                                                     |
|                                                                                                                              |             |                | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                       |                                |                              |                                                                                                     |
|                                                                                                                              |             |                | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                              |                                |                              |                                                                                                     |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0' | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |
|                                                                                                                              | 5'          |                | Water                                                                                         |                                |                              |                                                                                                     |
|                                                                                                                              | 10'         |                |                                                                                               |                                |                              |                                                                                                     |
|                                                                                                                              | 15'         |                |                                                                                               |                                |                              |                                                                                                     |
|                                                                                                                              | 20'         |                |                                                                                               |                                |                              |                                                                                                     |
|                                                                                                                              | 25'         |                |                                                                                               |                                |                              |                                                                                                     |
|                                                                                                                              | 30'         |                |                                                                                               |                                |                              |                                                                                                     |
| -30.0                                                                                                                        |             |                | Continued on sheet 2                                                                          |                                |                              |                                                                                                     |
|                                                                                                                              |             |                | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                                |                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |

Hole No. SH-24

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                                                                      | INSTALLATION<br>Savannah, GA                      |                              | SHEET 1.<br>OF 2 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |            |                            |                                                                                                                      | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon  |                              |                                                                                                      |  |
| 2. LOCATION (Coordinates w/ Station)<br>See Plans Sta 95+500E, R=138"                                                        |            |                            |                                                                                                                      | 11. DATUM FOR ELEVATION SHOWN (BSM or MLL)<br>MLW |                              |                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75 |                              |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-24                                                             |            |                            |                                                                                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN        |                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                           |  |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |            |                            |                                                                                                                      | 14. TOTAL NUMBER CORE BOXES                       |                              | 14. TOTAL NUMBER CORE BOXES                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                                      | 15. ELEVATION GROUND WATER                        |                              | 15. ELEVATION GROUND WATER                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>55.5'                                                                                          |            |                            |                                                                                                                      | 16. DATE HOLE<br>25 Nov 77                        |                              | 16. DATE HOLE<br>25 Nov 77                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                            |                                                                                                                      | 17. ELEVATION TOP OF HOLE<br>0.0 MLW              |                              | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                                 |  |
| 9. TOTAL DEPTH OF HOLE<br>-55.5' MLW                                                                                         |            |                            |                                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING                |                              | 18. TOTAL CORE RECOVERY FOR BORING                                                                   |  |
|                                                                                                                              |            |                            |                                                                                                                      | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN  |                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                                     |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                    | % CORE<br>RECOV-<br>ERY<br>e                      | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g            |  |
|                                                                                                                              | 5'         |                            | Water                                                                                                                |                                                   |                              |                                                                                                      |  |
|                                                                                                                              | 10'        |                            |                                                                                                                      |                                                   |                              |                                                                                                      |  |
|                                                                                                                              | 15'        |                            |                                                                                                                      |                                                   |                              |                                                                                                      |  |
|                                                                                                                              | 20'        |                            |                                                                                                                      |                                                   |                              |                                                                                                      |  |
|                                                                                                                              | 25'        |                            |                                                                                                                      |                                                   |                              |                                                                                                      |  |
| -30.0                                                                                                                        | 30'        |                            | Continued on sheet 2<br>NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System |                                                   |                              | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30". |  |

| DRILLING LOG (Cont Sheet) |            | LOCATION TOP OF HOLE |                                                                  | Hole No. SH-24       |                                                                                        |
|---------------------------|------------|----------------------|------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------------|
| PROJECT                   |            | INSTALLATION         |                                                                  | SHEET 2 OF 2 SHEETS  |                                                                                        |
| Savannah Harbor           |            | Savannah, GA         |                                                                  |                      |                                                                                        |
| ELEVATION<br>a            | DEPTH<br>b | LEGEND               | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                | % CORE RECOVERY<br>e | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>f |
| 31.5                      | 30'        |                      | Bottom of river -31.5'                                           | TAR                  | Blows                                                                                  |
|                           |            |                      | SP- Tan poorly graded sand                                       | 1                    | 7                                                                                      |
|                           | 35'        |                      | Tan and gray                                                     |                      | 14                                                                                     |
|                           |            |                      |                                                                  | 2                    | 15                                                                                     |
|                           |            |                      |                                                                  |                      | 19                                                                                     |
|                           | 40'        |                      | Tan                                                              | 3                    | 25                                                                                     |
| -41.0                     |            |                      |                                                                  |                      | 61                                                                                     |
|                           |            |                      | MH - Dark green hard clayey silt interbedded with some fine sand | 4                    | 64                                                                                     |
|                           | 45'        |                      |                                                                  |                      | 55                                                                                     |
|                           |            |                      |                                                                  | 5                    | 66                                                                                     |
|                           |            |                      |                                                                  |                      | 71                                                                                     |
|                           | 50'        |                      |                                                                  |                      | 83                                                                                     |
|                           |            |                      |                                                                  |                      | 94                                                                                     |
|                           |            |                      |                                                                  |                      | 100/0.7                                                                                |
| -55.5                     | 55'        |                      | Bottom of hole -55.5' MLW                                        |                      | 94                                                                                     |
|                           |            |                      |                                                                  |                      | 97                                                                                     |

Hole No. SH-25

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                         | INSTALLATION<br>Savannah, GA                                                                  |                   | SHEET 1<br>OF 2 SHEETS                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |                            |                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                 |                   |                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 94+500E, R="37"                                                         |       |                            |                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                             |                   |                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Henwood                                |                   |                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-25                                                             |       |                            |                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                    |                   | DISTURBED<br>8<br>UNDISTURBED<br>0                                                |  |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |       |                            |                                                         | 14. TOTAL NUMBER CORE BOXES                                                                   |                   |                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                         | 15. ELEVATION GROUND WATER                                                                    |                   |                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 55.5'                                                                                             |       |                            |                                                         | 16. DATE HOLE                                                                                 |                   | STARTED<br>27 Oct 77<br>COMPLETED<br>27 Oct 77                                    |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                         | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                             |                   | 18. TOTAL CORE RECOVERY FOR BORING %                                              |  |
| 9. TOTAL DEPTH OF HOLE -55.5' MLW                                                                                            |       |                            |                                                         | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                              |                   |                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)            | % CORE RECOVERY                                                                               | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 0.0 MLW                                                                                                                      | 0' b  | c                          | d                                                       | e                                                                                             | f                 | g                                                                                 |  |
| -1.5                                                                                                                         |       |                            | Water<br>Bottom of river -1.5'                          |                                                                                               | JAR               | Blows                                                                             |  |
|                                                                                                                              | 5'    |                            | SM - Gray and brown fine and medium silty sand          |                                                                                               | 1                 | 9                                                                                 |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 11                                                                                |  |
|                                                                                                                              |       |                            | Greenish gray fine silty sand                           |                                                                                               | 2                 | 11                                                                                |  |
|                                                                                                                              | 10'   |                            | With some soft silt layers                              |                                                                                               |                   | 13                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 9                                                                                 |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 7                                                                                 |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 5                                                                                 |  |
|                                                                                                                              | 15'   |                            | SM - MH - Gray fine silty sand with layers of soft silt |                                                                                               | 3                 | 4                                                                                 |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 12                                                                                |  |
| -16.5                                                                                                                        |       |                            | SP - Tan poorly graded sand                             |                                                                                               | 4                 | 16                                                                                |  |
|                                                                                                                              | 20'   |                            |                                                         |                                                                                               |                   | 21                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 29                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 37                                                                                |  |
|                                                                                                                              | 25'   |                            |                                                         |                                                                                               | 5                 | 35                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 32                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 39                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 41                                                                                |  |
|                                                                                                                              |       |                            |                                                         |                                                                                               |                   | 50                                                                                |  |
| -30.0                                                                                                                        | 30'   |                            | Continued on sheet 2                                    |                                                                                               |                   | 55                                                                                |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                                      |       |                            |                                                         | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30' |                   |                                                                                   |  |

| DRILLING LOG (Cont Sheet) |       |         | FROM TOP OF HOLE                                                           |                    | 0.0 MLW                 |                                                                                      | Hole No. SH-25 |    |
|---------------------------|-------|---------|----------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|----------------|----|
| PROJECT                   |       |         | INSTALLATION                                                               |                    |                         | SHEET 2                                                                              |                |    |
| Savannah Harbor           |       |         | Savannah, GA                                                               |                    |                         | OF 2 SHEETS                                                                          |                |    |
| ELEVATION                 | DEPTH | LOG NO. | CLASSIFICATION OF MATERIALS<br>(Description)                               | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                |    |
| a                         | 30b   | c       | d                                                                          | e                  | JAR                     | g                                                                                    | Blows          |    |
|                           |       |         | SP - Tan poorly graded sand                                                |                    |                         |                                                                                      | 34             |    |
|                           |       |         |                                                                            |                    |                         | 6                                                                                    |                | 27 |
|                           | 35'   |         |                                                                            |                    |                         |                                                                                      |                | 31 |
|                           |       |         |                                                                            |                    |                         |                                                                                      |                | 29 |
|                           |       |         |                                                                            |                    |                         |                                                                                      |                | 23 |
|                           | 40'   |         | SM - Dark green fine cemented<br>silty sand                                |                    |                         |                                                                                      | 19             |    |
|                           |       |         |                                                                            |                    |                         |                                                                                      |                | 21 |
|                           |       |         |                                                                            |                    |                         |                                                                                      |                | 14 |
|                           | 45'   |         |                                                                            |                    |                         |                                                                                      |                | 21 |
|                           |       |         |                                                                            |                    |                         |                                                                                      |                | 24 |
| -46.5                     |       |         |                                                                            |                    | 7                       |                                                                                      | 28             |    |
|                           | 50'   |         | MH - Dark green hard clayey<br>silt interbedded with fine<br>sand and mica |                    |                         |                                                                                      | 64             |    |
| -51.0                     |       |         |                                                                            |                    |                         |                                                                                      |                | 73 |
|                           |       |         |                                                                            |                    |                         | 8                                                                                    |                | 88 |
|                           |       |         |                                                                            |                    |                         |                                                                                      |                | 70 |
| -55.5                     | 55'   |         | Bottom of hole -55.5' MLW                                                  |                    |                         |                                                                                      |                | 66 |

Hole No. SH-26

| DRILLING LOG                                                                                                                 |                 | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah, GA                                                                                          |                              | SHEET 1<br>OF 4 SHEETS                         |                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |                 |                            | 10. SIZE AND TYPE OF BIT: 1 3/8" ID Splitspoon                                                                        |                              |                                                |                                                                                                    |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 924750E, R=136"                                                         |                 |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>Sprague and Henwood                                                     |                              |                                                |                                                                                                    |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |                 |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                                               |                              |                                                |                                                                                                    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-26                                                             |                 |                            | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                                        |                              | DISTURBED<br>6<br>UNDISTURBED<br>0             |                                                                                                    |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |                 |                            | 14. TOTAL NUMBER CORE BOXES                                                                                           |                              |                                                |                                                                                                    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                 |                            | 15. ELEVATION GROUND WATER                                                                                            |                              |                                                |                                                                                                    |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |                 |                            | 16. DATE HOLE                                                                                                         |                              | STARTED<br>28 Oct 77<br>COMPLETED<br>28 Oct 77 |                                                                                                    |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |                 |                            | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                                                  |                              |                                                |                                                                                                    |
| 9. TOTAL DEPTH OF HOLE<br>-55.0' MLW                                                                                         |                 |                            | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                                               |                              |                                                |                                                                                                    |
|                                                                                                                              |                 |                            | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                                                      |                              |                                                |                                                                                                    |
| ELEVATION<br>0.0 MLW                                                                                                         | DEPTH<br>0' MLW | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                     | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f                   | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g          |
|                                                                                                                              | 5'              |                            | Water                                                                                                                 |                              |                                                |                                                                                                    |
|                                                                                                                              | 10'             |                            |                                                                                                                       |                              |                                                |                                                                                                    |
|                                                                                                                              | 15'             |                            | Bottom of river -14.5'                                                                                                |                              | JAR                                            | Blows                                                                                              |
|                                                                                                                              |                 |                            | SM- Gray and brown fine and<br>medium silty sand                                                                      |                              | 1                                              |                                                                                                    |
|                                                                                                                              | 20'             |                            | GM - Light gray and tan<br>coarse sand and gravel                                                                     |                              | 2                                              |                                                                                                    |
|                                                                                                                              | 25'             |                            |                                                                                                                       |                              | 3                                              |                                                                                                    |
|                                                                                                                              | 30'             |                            | SP - Light gray poorly<br>graded sand                                                                                 |                              | 4                                              |                                                                                                    |
|                                                                                                                              |                 |                            | Continued on sheet 2<br>NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                              |                                                | Blows Per Foot:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30 |

| DRILLING LOG (Cont Sheet) |       | FROM TOP OF HOLE |                                                           | Hole No. SH-26          |                         |                                                                                      |
|---------------------------|-------|------------------|-----------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       | 0.0 MLW          |                                                           | SHEET 2                 |                         |                                                                                      |
| Savannah Harbor           |       | Savannah, GA     |                                                           | OF 2 SHEETS             |                         |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND           | CLASSIFICATION OF MATERIALS<br>(Description)              | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| s                         | 38'   | c                | d                                                         | e                       | f                       | g                                                                                    |
|                           |       |                  | SP - Light gray poorly<br>graded sand                     |                         | JAR<br>4                | 28                                                                                   |
|                           |       |                  |                                                           |                         |                         | 25                                                                                   |
|                           |       |                  |                                                           |                         |                         | 31                                                                                   |
|                           | 35'   |                  |                                                           |                         |                         | 29                                                                                   |
|                           |       |                  |                                                           |                         |                         | 34                                                                                   |
|                           |       |                  |                                                           |                         |                         | 38                                                                                   |
|                           | 40'   |                  |                                                           |                         |                         | 33                                                                                   |
|                           |       |                  |                                                           |                         |                         | 35                                                                                   |
|                           |       |                  |                                                           |                         |                         | 40                                                                                   |
|                           | 45'   |                  |                                                           |                         |                         | 38                                                                                   |
|                           |       |                  |                                                           |                         |                         | 35                                                                                   |
| -47.5                     |       |                  |                                                           |                         |                         | 31                                                                                   |
|                           |       |                  | SM - Dark green fine<br>cemented silty sand               |                         | 5                       | 56                                                                                   |
|                           | 50'   |                  |                                                           |                         |                         | 61                                                                                   |
|                           |       |                  | with hard silt layers,<br>micaceous                       |                         |                         | 69                                                                                   |
| -53.5                     |       |                  | MH - Dark green hard clayey<br>silt with fine sand lenses |                         |                         | 70                                                                                   |
| -55.0                     | 55'   |                  | micaceous<br>Bottom of hole -55.0' MLW                    |                         | 6                       | 68                                                                                   |

Hole No. SH-27

| DRILLING LOG                                                                                         |             | DIVISION       | INSTALLATION                                                                                  |                                                                                                     | SHEET 1<br>OF 2 SHEETS       |                                                                                           |
|------------------------------------------------------------------------------------------------------|-------------|----------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| 1. PROJECT                                                                                           |             | South Atlantic | Savannah, GA                                                                                  |                                                                                                     |                              |                                                                                           |
| Savannah Harbor                                                                                      |             |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                 |                                                                                                     |                              |                                                                                           |
| 2. LOCATION (Coordinates or Station)                                                                 |             |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)                                                    |                                                                                                     |                              |                                                                                           |
| See Plan Sta 89+0.00E, R= "35"                                                                       |             |                | MLW                                                                                           |                                                                                                     |                              |                                                                                           |
| 3. DRILLING AGENCY                                                                                   |             |                | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                       |                                                                                                     |                              |                                                                                           |
| Savannah District                                                                                    |             |                | CMP 75                                                                                        |                                                                                                     |                              |                                                                                           |
| 4. HOLE NO. (As shown on covering title and file number)                                             |             | SH-27          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                    |                                                                                                     | DISTURBED                    | UNDISTURBED                                                                               |
|                                                                                                      |             |                | 4                                                                                             |                                                                                                     | 0                            |                                                                                           |
| 5. NAME OF OPERATOR                                                                                  |             |                | 14. TOTAL NUMBER CORE BOXES                                                                   |                                                                                                     |                              |                                                                                           |
| T. W. Scott                                                                                          |             |                | 15. ELEVATION GROUND WATER                                                                    |                                                                                                     |                              |                                                                                           |
| 6. DIRECTION OF HOLE                                                                                 |             |                | 16. DATE HOLE                                                                                 |                                                                                                     | STARTED                      | COMPLETED                                                                                 |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                | 23 Nov 77                                                                                     |                                                                                                     | 23 Nov 77                    |                                                                                           |
| 7. THICKNESS OF OVERBURDEN                                                                           |             | 55.0'          | 17. ELEVATION TOP OF HOLE                                                                     |                                                                                                     | 0.0 MLW                      |                                                                                           |
| 8. DEPTH DRILLED INTO ROCK                                                                           |             | 0.0'           | 18. TOTAL CORE RECOVERY FOR BORING                                                            |                                                                                                     | %                            |                                                                                           |
| 9. TOTAL DEPTH OF HOLE                                                                               |             | -55.0' MLW     | 19. SIGNATURE OF INSPECTOR                                                                    |                                                                                                     | CHARLES D. CRIEEN            |                                                                                           |
| ELEVATION<br>0.0.                                                                                    | DEPTH<br>0' | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVERY<br>e                                                                             | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                                                                                      | 5'          |                | Water                                                                                         |                                                                                                     |                              |                                                                                           |
|                                                                                                      | 10'         |                |                                                                                               |                                                                                                     |                              |                                                                                           |
|                                                                                                      | 15'         |                |                                                                                               |                                                                                                     |                              |                                                                                           |
|                                                                                                      | 20'         |                |                                                                                               |                                                                                                     |                              |                                                                                           |
|                                                                                                      | 25'         |                |                                                                                               |                                                                                                     |                              |                                                                                           |
|                                                                                                      | 30'         |                |                                                                                               |                                                                                                     |                              |                                                                                           |
| -30.0                                                                                                |             |                |                                                                                               |                                                                                                     |                              |                                                                                           |
|                                                                                                      |             |                | Continued on sheet 2                                                                          |                                                                                                     |                              |                                                                                           |
|                                                                                                      |             |                | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30' |                              |                                                                                           |



Hole No. SH-28

| DRILLING LOG                                                                                                                 |       | DIVISION       | INSTALLATION                                                                            |                 | SHEET                  |                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------|-----------------|------------------------|-----------------------------------------------------------------------------------------------|
|                                                                                                                              |       | South Atlantic | Savannah, GA                                                                            |                 | 1<br>OF 2 SHEETS       |                                                                                               |
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                           |                 |                        |                                                                                               |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 88+0005, R=133"                                                         |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                       |                 |                        |                                                                                               |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                       |                 |                        |                                                                                               |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-28                                                             |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                              |                 | DISTURBED<br>4         |                                                                                               |
|                                                                                                                              |       |                |                                                                                         |                 | UNDISTURBED<br>0       |                                                                                               |
| 5. NAME OF OPERATOR<br>T. W. Scott                                                                                           |       |                | 14. TOTAL NUMBER CORE BOXES                                                             |                 |                        |                                                                                               |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 15. ELEVATION GROUND WATER                                                              |                 |                        |                                                                                               |
|                                                                                                                              |       |                | 16. DATE HOLE                                                                           |                 | STARTED<br>22 Nov 77   |                                                                                               |
|                                                                                                                              |       |                |                                                                                         |                 | COMPLETED<br>22 Nov 77 |                                                                                               |
| 7. THICKNESS OF OVERBURDEN<br>56.0'                                                                                          |       |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                    |                 |                        |                                                                                               |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                | 18. TOTAL CORE RECOVERY FOR BORING<br>1                                                 |                 |                        |                                                                                               |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW                                                                                         |       |                | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                        |                 |                        |                                                                                               |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE RECOVERY | BOX OR SAMPLE NO.      | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)             |
| 0.0 MLW                                                                                                                      | 0'    | c              |                                                                                         |                 |                        |                                                                                               |
|                                                                                                                              | 5'    |                | Water                                                                                   |                 |                        |                                                                                               |
|                                                                                                                              | 10'   |                |                                                                                         |                 |                        |                                                                                               |
|                                                                                                                              | 15'   |                |                                                                                         |                 |                        |                                                                                               |
|                                                                                                                              | 20'   |                |                                                                                         |                 |                        |                                                                                               |
|                                                                                                                              | 25'   |                |                                                                                         |                 |                        |                                                                                               |
| -30.0                                                                                                                        | 30'   |                | Continued on sheet 2                                                                    |                 |                        |                                                                                               |
|                                                                                                                              |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                 |                        |                                                                                               |
|                                                                                                                              |       |                |                                                                                         |                 |                        | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30' |

| DRILLING LOG (Cont Sheet) |            |             | ATION TOP OF HOLE                                         |                              | Hole No. SH-28               |                                                                                           |
|---------------------------|------------|-------------|-----------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor   |            |             | INSTALLATION Savannah, GA                                 |                              | SHEET 2 OF 2 SHEETS          |                                                                                           |
| ELEVATION<br>a            | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d         | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
| -33.5                     | 30'        |             | Water                                                     |                              |                              |                                                                                           |
|                           |            |             | Bottom of river -33.5'                                    |                              | JAR                          | Blows                                                                                     |
|                           | 35'        |             | SP-SM - Tan medium & coarse<br>silty & poorly graded sand |                              | 1                            | 10                                                                                        |
|                           |            |             | Tan and greenish gray                                     |                              |                              | 11                                                                                        |
|                           |            |             |                                                           |                              |                              | 19                                                                                        |
|                           | 40'        |             |                                                           |                              | 2                            | 25                                                                                        |
|                           |            |             |                                                           |                              |                              | 24                                                                                        |
|                           |            |             | SM - Dark green very fine<br>cemented silty sand          |                              | 3                            | 42                                                                                        |
|                           |            |             |                                                           |                              |                              | 31                                                                                        |
|                           | 45'        |             |                                                           |                              |                              | 47                                                                                        |
|                           |            |             |                                                           |                              |                              | 68                                                                                        |
|                           |            |             |                                                           |                              |                              | 79                                                                                        |
|                           | 50'        |             |                                                           |                              | 4                            | 88                                                                                        |
|                           |            |             |                                                           |                              |                              | 91                                                                                        |
|                           |            |             |                                                           |                              |                              | 100/0.9                                                                                   |
|                           | 55'        |             |                                                           |                              |                              | 94                                                                                        |
| -56.0                     |            |             | Bottom of hole -56.0 MLW                                  |                              |                              | 91                                                                                        |

| DRILLING LOG (Cont Sheet) |               |             | LOCATION TOP OF HOLE                                        |                              | Hole No. SH-27               |                                                                                           |       |
|---------------------------|---------------|-------------|-------------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|-------|
| PROJECT                   |               |             | INSTALLATION                                                |                              |                              | SHEET 2<br>OF 2 SHEETS                                                                    |       |
| ELEVATION<br>a            | DEPTH<br>30 b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d           | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |       |
|                           |               |             | Water                                                       |                              |                              |                                                                                           |       |
| -35.5                     | 35'           |             | Bottom of river -35.5'                                      |                              | JAR                          |                                                                                           | Blows |
|                           |               |             | SP-SM - Tan and gray medium<br>poorly graded and silty sand |                              | 1                            |                                                                                           | 4     |
|                           | 40'           |             |                                                             |                              |                              |                                                                                           | 6     |
|                           |               |             |                                                             |                              | 2                            |                                                                                           | 6     |
|                           |               |             |                                                             |                              |                              |                                                                                           | 10    |
| -44.0                     |               |             |                                                             |                              |                              |                                                                                           | 23    |
|                           | 45'           |             | SM - Dark green very fine<br>cemented silty sand            |                              | 3                            |                                                                                           | 41    |
|                           |               |             |                                                             |                              |                              |                                                                                           | 50    |
|                           |               |             |                                                             |                              |                              |                                                                                           | 62    |
|                           | 50'           |             |                                                             |                              |                              |                                                                                           | 58    |
|                           |               |             |                                                             |                              | 4                            |                                                                                           | 60    |
|                           |               |             |                                                             |                              |                              |                                                                                           | 71    |
|                           |               |             |                                                             |                              |                              |                                                                                           | 88    |
| -55.0                     | 55'           |             | Bottom of hole -55.0' MLW                                   |                              |                              |                                                                                           | 75    |

Hole No. SH-29

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic |                                                   | INSTALLATION<br>Savannah, GA                                                                  |                              | SHEET 1<br>OF 3 SHEETS                                                                    |       |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |             |                            |                                                   | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                 |                              |                                                                                           |       |
| 2. LOCATION (Coordinates or Sounding)<br>See Plan Sta 8+000E, R=1133"                                                        |             |                            |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)<br>MLW                                             |                              |                                                                                           |       |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Henwood                                |                              |                                                                                           |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-29                                                             |             |                            |                                                   | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                |                              | DISTURBED<br>8<br>UNDISTURBED<br>0                                                        |       |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |             |                            |                                                   | 14. TOTAL NUMBER CORE BOXES                                                                   |                              |                                                                                           |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                   | 15. ELEVATION GROUND WATER                                                                    |                              |                                                                                           |       |
| 7. THICKNESS OF OVERBURDEN<br>56.0'                                                                                          |             |                            |                                                   | 16. DATE HOLE                                                                                 |                              | STARTED<br>29 Oct 77<br>COMPLETED<br>29 Oct 77                                            |       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                   | 17. ELEVATION TOP OF HOLE<br>-0.6 MLW                                                         |                              |                                                                                           |       |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW                                                                                         |             |                            |                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                       |                              |                                                                                           |       |
|                                                                                                                              |             |                            |                                                   | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                              |                              |                                                                                           |       |
| ELEVATION<br>0.0 MLW                                                                                                         | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOV-<br>ERY<br>e                                                                  | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |       |
|                                                                                                                              | 5'          |                            | Water                                             |                                                                                               |                              |                                                                                           |       |
| -11.0                                                                                                                        | 10'         |                            | Bottom of river -11.0'                            |                                                                                               | JAR                          |                                                                                           | Blows |
|                                                                                                                              | 15'         |                            | SP - Tan poorly graded sand                       |                                                                                               | 1                            |                                                                                           | 13    |
|                                                                                                                              |             |                            |                                                   |                                                                                               |                              |                                                                                           | 18    |
|                                                                                                                              |             |                            | Tan and gray                                      |                                                                                               | 2                            |                                                                                           | 25    |
|                                                                                                                              |             |                            |                                                   |                                                                                               |                              |                                                                                           | 31    |
|                                                                                                                              | 20'         |                            |                                                   |                                                                                               |                              |                                                                                           | 38    |
|                                                                                                                              |             |                            |                                                   |                                                                                               | 3                            |                                                                                           | 58    |
|                                                                                                                              |             |                            |                                                   |                                                                                               |                              |                                                                                           | 84    |
|                                                                                                                              | 25'         |                            |                                                   |                                                                                               |                              |                                                                                           | 51    |
|                                                                                                                              |             |                            |                                                   |                                                                                               | 4                            |                                                                                           | 42    |
|                                                                                                                              |             |                            |                                                   |                                                                                               |                              |                                                                                           | 29    |
|                                                                                                                              |             |                            |                                                   |                                                                                               |                              |                                                                                           | 30    |
| 30.0                                                                                                                         | 30'         |                            | Continued on sheet 2                              |                                                                                               |                              |                                                                                           | 39    |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                                      |             |                            |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30' |                              |                                                                                           |       |

| DRILLING LOG (Cont Sheet) |       | ATION TOP OF HOLE |                             | 0.0 MLW   |        | Hole No.                             |       | SH-29 |  |
|---------------------------|-------|-------------------|-----------------------------|-----------|--------|--------------------------------------|-------|-------|--|
| PROJECT                   |       |                   | INSTALLATION                |           |        | SHEET 2                              |       |       |  |
| Savannah Harbor           |       |                   | Savannah, GA                |           |        | OF 2 SHEETS                          |       |       |  |
| ELEVATION                 | DEPTH | LOG               | CLASSIFICATION OF MATERIALS | % CORE    | BOX OR | REMARKS                              |       |       |  |
| a                         | 30'   |                   | (Description)               | RECOVERED | SAMPLE | (Drilling time, water loss, depth of |       |       |  |
|                           |       |                   | u                           | e         | JAR    | weathering, etc., if significant)    |       |       |  |
|                           |       |                   |                             |           |        | #                                    | BLOWS |       |  |
|                           |       |                   |                             |           |        |                                      |       | 36    |  |
|                           |       |                   | SP - Tan and gray poorly    |           | 5      |                                      |       | 41    |  |
|                           |       |                   | graded sand                 |           |        |                                      |       | 48    |  |
|                           | 35'   |                   |                             |           |        |                                      |       | 44    |  |
|                           |       |                   |                             |           |        |                                      |       | 39    |  |
|                           |       |                   |                             |           |        |                                      |       | 35    |  |
|                           | 40'   |                   |                             |           |        |                                      |       | 33    |  |
|                           |       |                   | With some gravel            |           |        |                                      |       | 38    |  |
|                           |       |                   |                             |           |        |                                      |       | 40    |  |
|                           |       |                   |                             |           |        |                                      |       | 48    |  |
|                           | 45'   |                   | Tan poorly graded sand      |           | 6      |                                      |       | 34    |  |
|                           |       |                   |                             |           |        |                                      |       | 31    |  |
|                           |       |                   |                             |           |        |                                      |       | 29    |  |
| -48.5                     | 50'   |                   | MH - Dark green hard clayey |           | 7      |                                      |       | 77    |  |
|                           |       |                   | silt                        |           |        |                                      |       | 84    |  |
|                           |       |                   |                             |           |        |                                      |       | 90    |  |
|                           | 55'   |                   |                             |           | 8      |                                      |       | 88    |  |
| -56.0                     |       |                   | Bottom of hole -56.0' MLW   |           |        |                                      |       |       |  |

Hole No. SH-67

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic                       |                                                                                                                  | INSTALLATION<br>Savannah, GA                      |                        | SHEET<br>OF 1 SHEETS                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |             | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Splitspoon |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW |                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Henwood                             |  |
| 2. LOCATION (Coordinates or Station)<br>X-830665, Y-761539                                                                   |             | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN       |                                                                                                                  | DISTURBED<br>3                                    |                        | UNDISTURBED<br>0                                                                           |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             | 14. TOTAL NUMBER CORE BOXES                      |                                                                                                                  | 15. ELEVATION GROUND WATER                        |                        | 16. DATE HOLE                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-67                                                             |             | 17. ELEVATION TOP OF HOLE<br>0.0 MLW             |                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>%           |                        | 19. SIGNATURE OF INSPECTOR<br>L. Benjamin                                                  |  |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |             | 18. TOTAL CORE RECOVERY FOR BORING<br>%          |                                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>L. Benjamin         |                        | 16. DATE HOLE                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             | 17. ELEVATION TOP OF HOLE<br>0.0 MLW             |                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>%           |                        | 19. SIGNATURE OF INSPECTOR<br>L. Benjamin                                                  |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |             | 18. TOTAL CORE RECOVERY FOR BORING<br>%          |                                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>L. Benjamin         |                        | 16. DATE HOLE                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |             | 19. SIGNATURE OF INSPECTOR<br>L. Benjamin        |                                                                                                                  | 16. DATE HOLE                                     |                        | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                       |  |
| 9. TOTAL DEPTH OF HOLE<br>52.6                                                                                               |             | 16. DATE HOLE                                    |                                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0 MLW              |                        | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                    |  |
| ELEVATION<br>e'                                                                                                              | DEPTH<br>b' | LEGEND<br>c                                      | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                | % CORE RECOVERY<br>e                              | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g     |  |
|                                                                                                                              |             |                                                  | Water                                                                                                            |                                                   | 1AR                    | Blows                                                                                      |  |
| -41.6'                                                                                                                       | 42          |                                                  | SP-Light green coarse poorly graded sand with some fine sandy silt and trace of mica                             |                                                   | 1                      | Note: The splitspoon was stuck in the hole over night.                                     |  |
| -44.6                                                                                                                        | 44          |                                                  | Trace of wood chip and no fine sandy silt.                                                                       |                                                   | 2                      |                                                                                            |  |
| -47.6'                                                                                                                       | 48          |                                                  | ML-Green fine sandy silt with no wood chip.                                                                      |                                                   | 3                      |                                                                                            |  |
| -52.6'                                                                                                                       | 52          |                                                  | Bottom of Hole: 52.6'<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                   |                        | Blows Per Foot: Number required to drive 1 3/8 ID splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-68

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                   | INSTALLATION<br>Savannah, GA                                     |                   | SHEET<br>1 OF 6 SHEETS                                                                  |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                                   | 10. SIZE AND TYPE OF BIT 5" Spoon, 4 1/2" Fishtail               |                   |                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X-830676, Y-761520                                                                   |       |                            |                                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                |                   |                                                                                         |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood     |                   |                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-68                                                             |       |                            |                                                                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>2 JARS             |                   | UNDISTURBED                                                                             |  |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |       |                            |                                                                                                                   | 14. TOTAL NUMBER CORE BOXES 10                                   |                   |                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                   | 15. ELEVATION GROUND WATER                                       |                   |                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |                            |                                                                                                                   | 16. DATE HOLE<br>29 Jul 82                                       |                   | STARTED<br>3 Aug 82                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       |                            |                                                                                                                   | 17. ELEVATION TOP OF HOLE 0.0 MLW                                |                   |                                                                                         |  |
| 9. TOTAL DEPTH OF HOLE 132.9                                                                                                 |       |                            |                                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING 87.1 %                        |                   |                                                                                         |  |
|                                                                                                                              |       |                            |                                                                                                                   | 19. SIGNATURE OF INSPECTOR<br>T.W. Scott, J. Arthur, L. Benjamin |                   |                                                                                         |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                      | 1. CORE RECOVERY                                                 | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)       |  |
| 0.0                                                                                                                          |       |                            | Water                                                                                                             |                                                                  |                   | Change scale at 50.0' Blows                                                             |  |
| -41.5                                                                                                                        | 50    |                            | See Remarks                                                                                                       |                                                                  | JAR               | Note: Weight of hammer and rods drove spoon from 41.5' to 51.0'                         |  |
| -51.0                                                                                                                        |       |                            | SM-Fine to coarse                                                                                                 |                                                                  | 1                 |                                                                                         |  |
| -52.5                                                                                                                        |       |                            | MH-Green                                                                                                          |                                                                  | 2                 | Note: Change of scale at 55.0'.                                                         |  |
| -55.5                                                                                                                        | 55    |                            | ML-MH-Green, soft with some fine sand, "marl-like material"                                                       |                                                                  |                   | Pull 1 55.5' to 57.5'<br>Run 2.0'<br>Rec 2.0'                                           |  |
|                                                                                                                              | 57    |                            |                                                                                                                   |                                                                  |                   | Pull 2 57.5' to 60.0'<br>Run 2.5'<br>Rec 2.5'<br>Note: Drove spoon from 60.0' to 60.4'. |  |
|                                                                                                                              | 59    |                            |                                                                                                                   |                                                                  | Box 1             | Pull 3 60.0' to 61.5'<br>Run 1.5'<br>Rec 1.5'                                           |  |
|                                                                                                                              | 61    |                            |                                                                                                                   |                                                                  |                   | Pull 4 61.5' to 64.0'<br>Run 2.5'<br>Rec 2.5'                                           |  |
|                                                                                                                              | 63    |                            |                                                                                                                   |                                                                  | Box 2             |                                                                                         |  |
| -64.0                                                                                                                        |       |                            | Continued on Sheet # 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                  |                   | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling. |  |

| DRILLING LOG (Cont Sheet) |       |        | ELEVATION TOP OF HOLE                                             |                    | 0.0 MLW                 |                                                                                      | Hole No. SH-68 |  |
|---------------------------|-------|--------|-------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|----------------|--|
| PROJECT                   |       |        | INSTALLATION                                                      |                    | Savannah, GA            |                                                                                      | SHEET 2        |  |
| Savannah Harbor Widening  |       |        |                                                                   |                    |                         |                                                                                      | OF 6 SHEETS    |  |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                      | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                |  |
| -64.0                     | 64h   | c      | d                                                                 | e                  | f                       | R                                                                                    |                |  |
|                           |       |        | (Continued)                                                       |                    |                         | Pull 5<br>64.0' to 65.5'<br>Run 1.5'<br>Rec 1.5'                                     |                |  |
|                           | 66    |        | ML-MH-Green, soft with some<br>fine sand, "marl-like<br>material" |                    |                         | Pull 6<br>65.5' to 69.0'<br>Run 3.5'<br>Rec 3.5'                                     |                |  |
|                           | 68    |        |                                                                   |                    |                         |                                                                                      |                |  |
|                           | 70    |        |                                                                   |                    |                         | Pull 7<br>69.0' to 72.5'<br>Run 3.5'<br>Rec 3.3'<br>C.L. 0.2'                        |                |  |
|                           | 72    |        |                                                                   |                    | Box<br>3                |                                                                                      |                |  |
|                           | 74    |        | With trace of fine sand                                           |                    |                         | Pull 8<br>72.5' to 75.5'<br>Run 3.0'<br>Rec 0.0'<br>C.L. 3.0'                        |                |  |
|                           | 76    |        |                                                                   |                    |                         | Pull 9<br>75.7' to 78.5'<br>Run 3.0'<br>Rec 4.3'                                     |                |  |
|                           | 78    |        |                                                                   |                    |                         |                                                                                      |                |  |
|                           | 80    |        |                                                                   |                    |                         | Pull 10<br>78.5' to 84.2'<br>Run 5.7'<br>Rec 3.8' C.L. 1.9'                          |                |  |
| -80.0                     |       |        | Continued on Sheet #3                                             |                    |                         |                                                                                      |                |  |



| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                          | Hole No.           |                         |                                                                                      |
|---------------------------|-------|-----------------------|------------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                                                                          | SHEET              |                         |                                                                                      |
| Savannah Harbor Widening  |       | Savannah, GA          |                                                                                          | SH-68              |                         |                                                                                      |
| SHEET 3                   |       | OF 6 SHEETS           |                                                                                          |                    |                         |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -80.0                     | 80    | c                     | d                                                                                        | e                  | f                       | g                                                                                    |
|                           |       |                       | (Continued)<br><br>ML-MH-Green, soft with trace<br>of fine sand, "marl-like<br>material" |                    |                         | Pull 10<br>(Continued)                                                               |
|                           |       |                       |                                                                                          |                    |                         | Pull 11<br>84.2' to 91.3'<br>Run 7.1'<br>Rec 3.6'<br>C.L. 3.5'<br>Taped at 89.8'     |
|                           |       |                       |                                                                                          |                    | Box<br>5                | Pull 12<br>91.0' to 94.2'<br>Run 2.9'<br>Rec 0.0'<br>C.L. 2.9'<br>Taped at 92.8'     |
|                           |       |                       |                                                                                          |                    |                         | Pull 13<br>94.2' to 95.6'<br>Run 1.4' Rec 1.8'<br>C.G. 0.4' Taped 91.6'              |
|                           |       |                       |                                                                                          |                    |                         | Pull 14                                                                              |
| -96.0                     |       |                       | Continued on Sheet # 4                                                                   |                    |                         |                                                                                      |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE |                                                                                       | 0.0 MLW            |                         | Hole No. SH-68                                                                       |  |
|----------------------------------|-------|-----------------------|---------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| PROJECT Savannah Harbor Widening |       |                       | INSTALLATION Savannah, GA                                                             |                    |                         | SHEET 4 OF 6 SHEETS                                                                  |  |
| ELEVATION                        | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                          | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| -06.0                            | 96.0  | c                     | d                                                                                     | e                  | f                       | K                                                                                    |  |
|                                  | 98    |                       | (Continued)<br>ML-MH-Green, soft with trace<br>of fine sand, "marl-like<br>material." |                    |                         | Pull 14<br>95.6' to 97.9'<br>Run 2.3'<br>Rec 6.1'<br>C.G. 3.8'                       |  |
|                                  | 100   |                       |                                                                                       |                    | Box 6                   | Pull 15<br>97.9' to 102.6'<br>Run 4.7'<br>Rec 4.7'                                   |  |
|                                  | 102   |                       |                                                                                       |                    |                         |                                                                                      |  |
|                                  | 104   |                       |                                                                                       |                    |                         | Pull 16<br>102.6' to 106.8'<br>Run 4.2'<br>Rec 4.2'<br>Taped at 106.8'               |  |
|                                  | 106   |                       |                                                                                       |                    | Box 7                   |                                                                                      |  |
|                                  | 108   |                       |                                                                                       |                    |                         | Pull 17<br>106.8' to 115.1'<br>Run 8.3'<br>Rec 7.8'<br>C.L. 0.5'<br>Taped at 114.6'  |  |
|                                  | 110   |                       |                                                                                       |                    |                         |                                                                                      |  |
| -112.0                           | 112   |                       |                                                                                       |                    |                         |                                                                                      |  |
|                                  |       |                       | Continued on Sheet # 5                                                                |                    |                         |                                                                                      |  |

| DRILLING LOG (Cont Sheet)           |       |        | ELEVATION TOP OF HOLE                                                                              |                           | 0.0 MLW                 |                                                                                      | Hole No. SH-68                                                                      |  |
|-------------------------------------|-------|--------|----------------------------------------------------------------------------------------------------|---------------------------|-------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
| PROJECT<br>Savannah Harbor Widening |       |        | INSTALLATION<br>Savannah, GA                                                                       |                           |                         |                                                                                      | SHEET 5<br>OF 6 SHEETS                                                              |  |
| ELEVATION                           | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                       | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                                                                                     |  |
| -112.0                              | 112   | c      | (Continued)<br>ML-MH-Green, soft with trace<br>of fine sand, "marl-like<br>material."              |                           |                         |                                                                                      |                                                                                     |  |
|                                     | 114   |        |                                                                                                    |                           | Box<br>8                |                                                                                      | Pull 17 (Continued)                                                                 |  |
|                                     | 116   |        |                                                                                                    |                           |                         |                                                                                      | Pull 18<br>115.1' to 121.7'<br>Run 6.6'<br>Rec 5.4'<br>C.L. 1.2'<br>Taped at 121.4' |  |
|                                     | 118   |        |                                                                                                    |                           |                         |                                                                                      |                                                                                     |  |
|                                     | 120   |        |                                                                                                    |                           |                         |                                                                                      |                                                                                     |  |
| -121.7                              | 122   |        | SC-Green medium to coarse<br>clayey sand with some fine<br>gravel                                  |                           |                         |                                                                                      | Pull 19<br>121.7' to 128.7'<br>Run 7.0'<br>Rec 4.5'<br>C.L. 2.5'<br>Taped at 127.0' |  |
|                                     | 124   |        | ML-MH-Green, soft micaceous<br>SC-Green medium to<br>coarse clayey sand                            |                           |                         |                                                                                      |                                                                                     |  |
|                                     | 126   |        | ML-MH-Green, soft<br>micaceous<br>SC-Green fine to<br>medium clayey sand                           |                           | Box<br>9                |                                                                                      |                                                                                     |  |
|                                     | 128   |        | ML-MH-Green soft micaceous<br>With fine to medium sand,<br>some fine gravel and shell<br>fragments |                           |                         |                                                                                      |                                                                                     |  |
| -128.0                              | 128   |        | SM-Grayish green, medium<br>coarse silty sand<br>With some clay, fine<br>gravel, shell fragments   |                           |                         |                                                                                      |                                                                                     |  |
|                                     |       |        | Continued on Sheet # 6                                                                             |                           |                         |                                                                                      |                                                                                     |  |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE 0.0 MLW                                                     |                                                                                                          | Hole No. SH-68      |                   |                                                                                     |
|----------------------------------|-------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------|-------------------|-------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       | INSTALLATION Savannah GA                                                          |                                                                                                          | SHEET 6 OF 6 SHEETS |                   |                                                                                     |
| ELEVATION                        | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS (Description)                                                                | % CORE RECOVERY     | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)      |
| -128.0                           | 128   |  | (Continued) SM-Grayish green medium to coarse silty sand with some clay, fine gravel and shell fragments |                     |                   | Pull 19 (Continued)                                                                 |
|                                  | 130   |  | Limestone-Light gray with some shells and medium to coarse sand, hard.                                   |                     | Box 9             | Pull 20<br>128.7' to 129.1'<br>Run 0.4'<br>Rec 1.1'<br>C.G. 0.7'<br>Taped at 128.8' |
|                                  | 132   |  |                                                                                                          |                     | Box 10            | Pull 21<br>129.1' to 131.9'<br>Run 2.8'<br>Rec 1.0'<br>C.L. 1.8'<br>Taped at 128.6' |
| -132.9                           |       |                                                                                   | Bottom of Hole: 132.9'                                                                                   |                     |                   | Pull 22<br>131.9' to 132.9'<br>Run 1.0'<br>Rec 1.0'<br>C.L. 0.0'<br>Taped at 131.4' |
|                                  |       |                                                                                   |                                                                                                          |                     |                   | Note: Hole Electric logged on 3 Aug 82                                              |

Hole No. SH-69

| DRILLING LOG                                                                                                                 |       | DIVISION       | INSTALLATION                                                                                                     |                 | SHEET             |                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       | South Atlantic | Savannah, GA                                                                                                     |                 | OF 1 SHEETS       |                                                                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>X-830688, Y-761519                                                                   |       |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID 5" splitspoon                                                                 |                 |                   |                                                                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                | 11. DAYUM FOR ELEVATION SHOWN (TUM or MSL)<br>MLW                                                                |                 |                   |                                                                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-69                                                             |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague Henwood                                                       |                 |                   |                                                                                                                                                     |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                       |                 |                   |                                                                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. TOTAL NUMBER CORE BOXES                                                                                      |                 |                   |                                                                                                                                                     |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |                | 15. ELEVATION GROUND WATER                                                                                       |                 |                   |                                                                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       |                | 16. DATE HOLE                                                                                                    |                 |                   |                                                                                                                                                     |
| 9. TOTAL DEPTH OF HOLE<br>57.0                                                                                               |       |                | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                                                |                 |                   |                                                                                                                                                     |
|                                                                                                                              |       |                | 18. TOTAL CORE RECOVERY FOR BORING                                                                               |                 |                   |                                                                                                                                                     |
|                                                                                                                              |       |                | 19. SIGNATURE OF INSPECTOR<br>B. Green & T. Scott                                                                |                 |                   |                                                                                                                                                     |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                                                     | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                   |
| 0.0                                                                                                                          | 0     |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
|                                                                                                                              | 5     |                | Water                                                                                                            |                 |                   |                                                                                                                                                     |
|                                                                                                                              | 10    |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
|                                                                                                                              | 15    |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
|                                                                                                                              | 20    |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
| -22.0                                                                                                                        | 25    |                | CH-Dark gray, fat clay, with seams of SC                                                                         |                 | 1                 | Note: Spoon pushed by weight of drill string and hammer                                                                                             |
|                                                                                                                              | 30    |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
|                                                                                                                              | 35    |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
| -37.0                                                                                                                        | 40    |                | SP-Gray, medium grained, poorly sorted sand, with some silt.                                                     |                 | 2                 |                                                                                                                                                     |
|                                                                                                                              | 45    |                |                                                                                                                  |                 | 3                 |                                                                                                                                                     |
| -45.0                                                                                                                        | 45    |                | GM                                                                                                               |                 | 4                 |                                                                                                                                                     |
|                                                                                                                              | 50    |                | No Sample                                                                                                        |                 |                   | Note: Switched to 300 lb. hammer and 5 inch spoon at EL.-48.0'.                                                                                     |
|                                                                                                                              | 55    |                |                                                                                                                  |                 |                   |                                                                                                                                                     |
| -57.0                                                                                                                        | 60    |                | Bottom of Hole:-57.0'<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                 |                   | Note: Hole abandoned at EL. -57.0 due to gravel in hole.<br>Blows Per foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling. |

| DRILLING LOG                                                                                                                 |            | DIVISION       |                                                                                        | INSTALLATION                                                 |                              | Hole No. SH-70                                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            | South Atlantic |                                                                                        | Savannah, GA                                                 |                              | SHEET 1 of 2 SHEETS                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-828814, Y-763538                                                                   |            |                |                                                                                        | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 4"             |                              |                                                                                                                            |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                |                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-70                                                             |            |                |                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                                                            |  |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |            |                |                                                                                        | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                    |                              | DISTURBED 6 UNDISTURBED 0                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                |                                                                                        | 14. TOTAL NUMBER CORE BOXES                                  |                              |                                                                                                                            |  |
| 7. THICKNESS OF OVERBURDEN<br>60.1'                                                                                          |            |                |                                                                                        | 15. ELEVATION GROUND WATER                                   |                              |                                                                                                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                |                                                                                        | 16. DATE HOLE STARTED 8 Sep 82 COMPLETED 8 Sep 82            |                              |                                                                                                                            |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |            |                |                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                               |                              |                                                                                                                            |  |
|                                                                                                                              |            |                |                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING %                         |                              |                                                                                                                            |  |
|                                                                                                                              |            |                |                                                                                        | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist           |                              |                                                                                                                            |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                      | % CORE<br>RECOVERY<br>e                                      | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of washing, etc., if significant)<br>g                                        |  |
|                                                                                                                              | 20         |                | Water                                                                                  |                                                              |                              | Note: Top of Hole established at 0.0' MLW.                                                                                 |  |
|                                                                                                                              | 25         |                |                                                                                        |                                                              |                              | Note: Scale changed at 20.0'                                                                                               |  |
| -27.5                                                                                                                        |            |                | Bottom of Harbor 27.5'                                                                 |                                                              |                              | Note: Checked water depth using tape with heavy weight.                                                                    |  |
|                                                                                                                              | 30         |                | MH-Gray fat silt.                                                                      |                                                              | JAR                          | Note: 27.5' to 30.7' weight of rod string drove splitspoon. 30.7'-43.6' weight of rod string plus hammer drove splitspoon. |  |
|                                                                                                                              | 35         |                |                                                                                        |                                                              | 1                            | 0                                                                                                                          |  |
|                                                                                                                              | 40         |                |                                                                                        |                                                              |                              |                                                                                                                            |  |
| -43.6                                                                                                                        | 45         |                | SM-Gray fine to medium silty sand                                                      |                                                              | 2                            | 18                                                                                                                         |  |
|                                                                                                                              |            |                | With layers of gray fat silt                                                           |                                                              |                              | 7                                                                                                                          |  |
| -47.5'                                                                                                                       |            |                | Continued on Sheet # 2                                                                 |                                                              |                              | 18                                                                                                                         |  |
|                                                                                                                              |            |                | Note: Soils field classified in accordance with the Unified Soil Classification System |                                                              |                              | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon 2/140                                                        |  |

| DRILLING LOG                                                                                                                 |            | DIVISION       |                                                        | INSTALLATION                                                 |                              | Hole No. SH-70                                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|--------------------------------------------------------|--------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            | South Atlantic |                                                        | Savannah, GA                                                 |                              | SHEET 1 OF 2 SHEETS                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-828814, Y-763538                                                                   |            |                |                                                        | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 4"             |                              |                                                                                                                            |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                |                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                                            |  |
| 4. HOLE ID (as shown on drawing title and file number)<br>SH-70                                                              |            |                |                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                                                            |  |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |            |                |                                                        | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN               |                              |                                                                                                                            |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                |                                                        | 14. TOTAL NUMBER OF CORES<br>1                               |                              |                                                                                                                            |  |
| 7. THICKNESS OF OVERBURDEN<br>50.1'                                                                                          |            |                |                                                        | 15. DATE HOLE STARTED<br>8 Sep 82                            |                              | COMPLETED<br>8 Sep 82                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                |                                                        | 16. ELEVATION TOP OF HOLE<br>0.0'                            |                              |                                                                                                                            |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |            |                |                                                        | 17. TOTAL CORE RECOVERY FOR BORING<br>%                      |                              |                                                                                                                            |  |
|                                                                                                                              |            |                |                                                        | 18. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist           |                              |                                                                                                                            |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d      | % CORE<br>RECOVERY<br>e                                      | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                  |  |
|                                                                                                                              | 20         |                | Water                                                  |                                                              |                              | Note: Top of Hole established at 0.0' MLW.                                                                                 |  |
|                                                                                                                              | 25         |                |                                                        |                                                              |                              | Note: Scale changed at 20.0'                                                                                               |  |
| -27.5                                                                                                                        |            |                | Bottom of Harbor 27.5'                                 |                                                              |                              | Note: Checked water depth using tape with heavy weight.                                                                    |  |
|                                                                                                                              | 30         |                | MH-Gray fat silt.                                      |                                                              | JAR                          | Note: 27.5' to 30.7' weight of rod string drove splitspoon. 30.7'-43.6' weight of rod string plus hammer drove splitspoon. |  |
|                                                                                                                              | 35         |                |                                                        |                                                              | 1                            |                                                                                                                            |  |
|                                                                                                                              | 40         |                |                                                        |                                                              |                              |                                                                                                                            |  |
| -43.6                                                                                                                        |            |                | SM-Gray fine to medium silty sand                      |                                                              | 2                            |                                                                                                                            |  |
|                                                                                                                              | 45         |                | With layers of gray fat silt                           |                                                              |                              |                                                                                                                            |  |
| -47.5'                                                                                                                       |            |                | Continued on Sheet # 2<br>Note: Soils field classified |                                                              |                              | Blow. Per Foot: Number                                                                                                     |  |

Hole No. SH-70

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic |                                                                                                                  | INSTALLATION<br>Savannah, GA                                 |                              | SHEET<br>OF 2 SHEETS                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                            |                                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 4"             |                              |                                                                                                                            |  |
| 2. LOCATION (Continent or Station)<br>X-828814, Y-763538 (Sta. 82)                                                           |              |                            |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TUN or MSL)<br>MLW            |                              |                                                                                                                            |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            |                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-70                                                             |              |                            |                                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | DISTURBED<br>6                                                                                                             |  |
|                                                                                                                              |              |                            |                                                                                                                  |                                                              |                              | UNDISTURBED<br>0                                                                                                           |  |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |              |                            |                                                                                                                  | 14. TOTAL NUMBER CORE BOXES                                  |                              |                                                                                                                            |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                                  | 15. ELEVATION GROUND WATER                                   |                              |                                                                                                                            |  |
|                                                                                                                              |              |                            |                                                                                                                  | 16. DATE HOLE                                                |                              | STARTED<br>8 Sep 82                                                                                                        |  |
|                                                                                                                              |              |                            |                                                                                                                  |                                                              |                              | COMPLETED<br>8 Sep 82                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>60.1' ±                                                                                        |              |                            |                                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                              |                                                                                                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING                           |                              |                                                                                                                            |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |              |                            |                                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist           |                              |                                                                                                                            |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                | % CORE<br>RECOVERY<br>e                                      | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g                                     |  |
|                                                                                                                              | 20           |                            | Water                                                                                                            |                                                              |                              | Note: Top of Hole established at 0.0' MLW.                                                                                 |  |
|                                                                                                                              | 25           |                            |                                                                                                                  |                                                              |                              | Note: Scale changed at 20.0'                                                                                               |  |
| -27.5                                                                                                                        |              |                            | Bottom of Harbor - 27.5'                                                                                         |                                                              |                              | Note: Checked water depth using tape with heavy weight.                                                                    |  |
|                                                                                                                              | 30           |                            | MH-Gray fat silt, very soft to 30.7', soft to 43.6'. (See Remarks)                                               |                                                              | JAR                          | Note: 27.5' to 30.7' weight of rod string drove splitspoon. 30.7'-43.6' weight of rod string plus hammer drove splitspoon. |  |
|                                                                                                                              | 35           |                            |                                                                                                                  |                                                              | 1                            | 0                                                                                                                          |  |
|                                                                                                                              | 40           |                            |                                                                                                                  |                                                              |                              |                                                                                                                            |  |
| -43.6                                                                                                                        |              |                            | SM-Gray fine to medium silty sand                                                                                |                                                              | 2                            | 18                                                                                                                         |  |
|                                                                                                                              | 45           |                            | With layers of gray fat silt                                                                                     |                                                              |                              | 7                                                                                                                          |  |
| -47.5'                                                                                                                       |              |                            | Continued on Sheet # 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System |                                                              |                              | 18                                                                                                                         |  |
|                                                                                                                              |              |                            |                                                                                                                  |                                                              |                              | Blows Per Foot: Number required to drive 1 3/8 ID splitspoon #140                                                          |  |



| DRILLING LOG (Cont Sheet)        |            |             | LOCATION TOP OF HOLE                                                       |                              | 0.0' MLW                     |                                                                                           | Hole No. SH-70 |  |
|----------------------------------|------------|-------------|----------------------------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|----------------|--|
| PROJECT Savannah Harbor Widening |            |             | INSTALLATION Savannah, GA                                                  |                              |                              | SHEET 1<br>of 2 SHEETS                                                                    |                |  |
| ELEVATION<br>a                   | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                          | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |                |  |
|                                  | 47.5       |             |                                                                            |                              |                              |                                                                                           |                |  |
|                                  | 50         |             | SM-Gray fine to medium<br>silty sand with layers of<br>gray fat silt.      |                              |                              |                                                                                           | 30             |  |
| -51.1                            |            |             | Green medium to coarse silty<br>sand with trace of fine<br>gravel and mica |                              | 3                            |                                                                                           | 100/0.9        |  |
| -52.6                            |            |             | MH-Green fat silt with<br>some fine sand and mica                          |                              | 4                            |                                                                                           | 50             |  |
|                                  | 55         |             | SM-Green fine silty sand with<br>some mica<br>With trace of fine gravel    |                              | 5                            |                                                                                           | 30             |  |
|                                  |            |             |                                                                            |                              |                              |                                                                                           | 50             |  |
|                                  |            |             |                                                                            |                              |                              |                                                                                           | 20             |  |
|                                  |            |             |                                                                            |                              |                              |                                                                                           | 47             |  |
| -60.1                            | 60         |             | With no gravel                                                             |                              | 6                            |                                                                                           | 45             |  |
|                                  |            |             | Bottom of Hole: -60.1'                                                     |                              |                              |                                                                                           |                |  |

Hole No. SH-71

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic |                                                                                         | INSTALLATION<br>Savannah, GA                                 |                              | SHEET 1<br>OF 2 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                            |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon 4"                |                              |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-829527, Y-762839                                                                   |              |                            |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                           |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-71                                                             |              |                            |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | DISTURBED 2 UNDISTURBED                                                                   |  |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |              |                            |                                                                                         | 14. TOTAL NUMBER CORE BOXES                                  |                              |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                         | 15. ELEVATION GROUND WATER                                   |                              |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 59.7' +                                                                                           |              |                            |                                                                                         | 16. DATE HOLE                                                |                              | STARTED 14 Sep 82 COMPLETED 14 Sep 82                                                     |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                            |                                                                                         | 17. ELEVATION TOP OF HOLE 0.0' MLW                           |                              | 18. TOTAL CORE RECOVERY FOR BORING 53.8'                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.7'                                                                                                 |              |                            |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist           |                              |                                                                                           |  |
| ELEVATION<br>(f)                                                                                                             | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVER-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              | 25           |                            | Water                                                                                   |                                                              |                              | Note: Scale change at 25.0' taped water depth to -27.3' MLW.                              |  |
| -27.3                                                                                                                        |              |                            | Bottom of Harbor 27.3'                                                                  |                                                              |                              |                                                                                           |  |
|                                                                                                                              | 30           |                            | See Remarks                                                                             |                                                              |                              | Note: Set casing to 44.4' and washed hole to 44.8'.                                       |  |
|                                                                                                                              | 35           |                            |                                                                                         |                                                              |                              |                                                                                           |  |
|                                                                                                                              | 40           |                            |                                                                                         |                                                              |                              |                                                                                           |  |
| -44.8                                                                                                                        | 45           |                            | SM-Green fine silty sand with some mica                                                 |                                                              | JAR                          | Blows                                                                                     |  |
|                                                                                                                              |              |                            | With trace of fine gravel                                                               |                                                              | 1                            | 31                                                                                        |  |
|                                                                                                                              |              |                            | With less silt, well compact                                                            |                                                              |                              | 25                                                                                        |  |
| -50.0                                                                                                                        | 50           |                            | Continued on Sheet # 2                                                                  |                                                              |                              | 23                                                                                        |  |
|                                                                                                                              |              |                            | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                              |                              | 100/0.3                                                                                   |  |
|                                                                                                                              |              |                            |                                                                                         |                                                              |                              | Blows Per Foot:<br>Number required to drive 1 3/8" ID splitspoon w/140 hammer falling.    |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                                              | Hole No. SH-71          |                                |                                                                                               |
|---------------------------|-------|-----------------------|--------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|-----------------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                                                                                              | SHEET 2 OF 2 SHEETS     |                                |                                                                                               |
| Savannah Harbor Widening  |       | Savannah, GA          |                                                                                                              |                         |                                |                                                                                               |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                                 | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>MAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>Blows |
| -50.0                     | 50'   | c                     | (Continued) SM-Green fine silty sand with trace of fine gravel, well compacted<br>With no gravel             |                         | 2                              | Note: Scale changed at 50.0'.<br>100/0.6                                                      |
|                           | 52'   | X                     | No Recovery                                                                                                  | 27%                     |                                | Pull 1<br>51.9' to 54.1'<br>Run 2.2'<br>Rec 0.6'<br>C.L. 1.6'                                 |
|                           | 54'   | X                     | SM-Green fine silty sand with some mica and sand lenses well compact and partially indurated.<br>No Recovery | 64%                     | Box 1                          | Pull 2<br>54.1' to 59.7'<br>Run 5.6'<br>Rec 3.6'<br>C.L. 2.0'                                 |
|                           | 56'   |                       | SM-Green fine silty sand with some mica, well compact and partially indurated                                |                         |                                |                                                                                               |
|                           | 58'   |                       |                                                                                                              |                         |                                |                                                                                               |
| -59.7                     | 60'   |                       | Bottom of Hole: 59.7'                                                                                        |                         |                                |                                                                                               |

Hole No. SH-72

| DRILLING LOG                                                                                                                 |              | DIVISION       | INSTALLATION                                                                                                     |                      | SHEET 1 OF 1 SHEETS    |                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|------------------------------------------------------------------------------------------------------------------|----------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              | South Atlantic | Savannah, GA                                                                                                     |                      |                        |                                                                                                                                                                           |
| 2. LOCATION (Coordinates or Station)<br>See Plan X-830206, Y-762075                                                          |              |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon, 4"                                                                |                      |                        |                                                                                                                                                                           |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                                   |                      |                        |                                                                                                                                                                           |
| 4. HOLE NO. (As shown on drawing title and file number) SH-72                                                                |              |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood                                                     |                      |                        |                                                                                                                                                                           |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |              |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                       |                      | DISTURBED              | UNDISTURBED                                                                                                                                                               |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                | 14. TOTAL NUMBER CORE BOXES                                                                                      |                      |                        |                                                                                                                                                                           |
| 7. THICKNESS OF OVERBURDEN 40.2' +                                                                                           |              |                | 15. ELEVATION GROUND WATER                                                                                       |                      |                        |                                                                                                                                                                           |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                | 16. DATE HOLE STARTED 15 Sep 82 COMPLETED 15 Sep 82                                                              |                      |                        |                                                                                                                                                                           |
| 9. TOTAL DEPTH OF HOLE 40.2'                                                                                                 |              |                | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                                                |                      |                        |                                                                                                                                                                           |
|                                                                                                                              |              |                | 18. TOTAL CORE RECOVERY FOR BORING %                                                                             |                      |                        |                                                                                                                                                                           |
|                                                                                                                              |              |                | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist                                                               |                      |                        |                                                                                                                                                                           |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                | % CORE RECOVERY<br>e | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g                                                                                    |
| -29.9                                                                                                                        |              |                | Water                                                                                                            |                      |                        | Note: Change of scale at 25.0' Taped water depth to -27.9' MLW.                                                                                                           |
|                                                                                                                              |              |                | Bottom of Harbor 27.9'                                                                                           |                      |                        |                                                                                                                                                                           |
|                                                                                                                              |              |                | (See Remarks)                                                                                                    |                      |                        | Note: Set casing and washed hole to 34.2'. Hole caved in, casing reset several times with final depth at 36.8'. Water return was slightly brown with fine, sand and mica. |
| -34.2                                                                                                                        |              |                | No Recovery                                                                                                      |                      |                        | Blows 19 26 56 36                                                                                                                                                         |
| -40.2                                                                                                                        |              |                | Bottom of Hole: 40.2'<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                      |                        | Note: For more information, see boring SH-72A<br>Blows Per Foot:<br>Number required to drive 1 3/8" splitspoon w/140 hammer falling.                                      |

Hole No. SH-72A

| DRILLING LOG                                                                                                                 |               | DIVISION       |                                                                                            | INSTALLATION                                                 |                              | SHEET 1 OF 1 SHEETS                                                                                                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |               | South Atlantic |                                                                                            | Savannah, GA                                                 |                              |                                                                                                                                                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>See Plans X-830206, Y-762075                                                         |               |                |                                                                                            | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon, 4"            |                              | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL) Fishtail                                                                                                                                                                       |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |               |                |                                                                                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                                                                                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file must be)<br>SH-72A                                                           |               |                |                                                                                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | DISTURBED 4 UNDISTURBED 0                                                                                                                                                                                                 |  |
| 5. NAME OF DRILLER<br>O. LaRoche                                                                                             |               |                |                                                                                            | 14. TOTAL NUMBER CORE BOXES                                  |                              |                                                                                                                                                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                |                                                                                            | 15. ELEVATION GROUND WATER                                   |                              |                                                                                                                                                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>40.1'                                                                                          |               |                |                                                                                            | 16. DATE HOLE                                                |                              | STARTED 22 Sep 82 COMPLETED 29 Sep 82                                                                                                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |               |                |                                                                                            | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                        |                              |                                                                                                                                                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>40.1'                                                                                              |               |                |                                                                                            | 18. TOTAL CORE RECOVERY FOR BORING                           |                              | %                                                                                                                                                                                                                         |  |
|                                                                                                                              |               |                |                                                                                            | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist           |                              |                                                                                                                                                                                                                           |  |
| ELEVATION<br>MLW                                                                                                             | DEPTH<br>0.0' | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                          | % CORE<br>RECOV-<br>ERY<br>e                                 | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                                 |  |
| -26.3'                                                                                                                       | 25            |                | Water                                                                                      |                                                              |                              | Note: Scale changed at 25.0'. Water depth taped from 0.0' MLW                                                                                                                                                             |  |
|                                                                                                                              |               |                | Bottom of Harbor 26.3'                                                                     |                                                              |                              | Blows                                                                                                                                                                                                                     |  |
|                                                                                                                              |               |                | SM-Grayish brown medium to coarse silty sand                                               |                                                              | 1                            | Note: Weight of tool string drove split-spoon from 26.3' to 27.4'. Continued to drive 28.9', 30.4', 31.1' inadvertently washed out hole,                                                                                  |  |
| -30.4'                                                                                                                       | 30            |                | See Remarks                                                                                |                                                              |                              |                                                                                                                                                                                                                           |  |
| -31.1'                                                                                                                       |               |                | SM-Grayish brown fine to medium silty sand                                                 |                                                              | 2                            |                                                                                                                                                                                                                           |  |
|                                                                                                                              |               |                | No Recovery (See Remarks)                                                                  |                                                              | 3                            | water return was brown with some fine to medium sand.                                                                                                                                                                     |  |
| -35.6'                                                                                                                       | 35            |                | No Recovery                                                                                |                                                              |                              | 31.1'-34.1' made a double drive to retain sample. 100/0.7'                                                                                                                                                                |  |
| -37.1'                                                                                                                       |               |                | GP-Light gray fine to coarse poorly graded gravel with some medium to coarse sand and silt |                                                              | 4                            | 35.6'-37.1' wash water brown and contained some organics (leaves, bark, grass, etc.) Set casing to 34.9', had difficulty keeping hole clear of sand. Terminated hole at 40.1' due to excessive time needed to clean hole. |  |
| -38.6'                                                                                                                       |               |                |                                                                                            |                                                              |                              |                                                                                                                                                                                                                           |  |
| -40.1'                                                                                                                       | 40            |                |                                                                                            |                                                              |                              |                                                                                                                                                                                                                           |  |
|                                                                                                                              |               |                | Bottom of Hole: 40.1'                                                                      |                                                              |                              |                                                                                                                                                                                                                           |  |
|                                                                                                                              |               |                | Note: Soils field classified in accordance with the Unified Soil Classification System.    |                                                              |                              | Blows Per Foot:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30"                                                                                                                             |  |

Hole No. SH-73

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah, Ga                                             |                              | SHEET 1<br>OF 2 SHEETS         |                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------|------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                            | 10. SIZE AND TYPE OF BIT 1 3/8" ID split spoon, 4"                       |                              |                                |                                                                                                          |
| 2. LOCATION (Coastline or Station)<br>See Plans X-830886, Y-761328                                                           |              |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW Fishtail, 4x5 1/2" BBL |                              |                                |                                                                                                          |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood             |                              |                                |                                                                                                          |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-73                                                             |              |                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 4 UNDISTURBED    |                              |                                |                                                                                                          |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |              |                            | 14. TOTAL NUMBER CORE BOXES<br>1                                         |                              |                                |                                                                                                          |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            | 15. ELEVATION GROUND WATER                                               |                              |                                |                                                                                                          |
| 7. THICKNESS OF OVERBURDEN<br>60.2' +                                                                                        |              |                            | 16. DATE HOLE<br>STARTED 16 Sep 82 COMPLETED 16 Sep 82                   |                              |                                |                                                                                                          |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                                    |                              |                                |                                                                                                          |
| 9. TOTAL DEPTH OF HOLE<br>60.2'                                                                                              |              |                            | 18. TOTAL CORE RECOVERY FOR BORING<br>76 %                               |                              |                                |                                                                                                          |
|                                                                                                                              |              |                            | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist                       |                              |                                |                                                                                                          |
| ELEVATION<br>0.0s                                                                                                            | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                        | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                |
|                                                                                                                              | 25           |                            | Water                                                                    |                              |                                | Note: Scale change at<br>25.0'. Taped water depth<br>to -29.9' MLW.                                      |
| -29.9                                                                                                                        | 30           |                            | Bottom of Harbor 29.9'                                                   |                              |                                |                                                                                                          |
|                                                                                                                              | 35           |                            | (See Remarks)                                                            |                              |                                | Note: Set casing to<br>42.2' and washed hole<br>to 43.1'.                                                |
|                                                                                                                              | 40           |                            |                                                                          |                              |                                | Note: Had difficulty<br>with sand getting inside<br>of casing after cleaning                             |
|                                                                                                                              | 45           |                            | SP-Grayish green fine to<br>medium poorly graded sand<br>No Recovery     |                              | JAR                            | Blows                                                                                                    |
|                                                                                                                              |              |                            |                                                                          | 1                            |                                | 32                                                                                                       |
|                                                                                                                              |              |                            |                                                                          |                              |                                | 30                                                                                                       |
|                                                                                                                              |              |                            | SP-White medium to coarse<br>poorly graded sand                          |                              | 2                              | 42                                                                                                       |
|                                                                                                                              |              |                            | SM-Green fine silty sand<br>with some mica and fine<br>gravel            |                              | 3                              | 100/0.5'                                                                                                 |
|                                                                                                                              | 50           |                            | (See Remarks)                                                            |                              |                                | Note: Reset casing and<br>washed hole from<br>48.6' to 50.8' 100/0.3'<br>and 51.6' to 52.8'.             |
|                                                                                                                              |              |                            | SM-Same as from 47.6' to<br>48.6'                                        |                              | 4                              |                                                                                                          |
| -52.5                                                                                                                        |              |                            | (See Remarks)                                                            |                              |                                | Blows Per Foot:<br>Number required to drive<br>1 3/8" ID split spoon<br>w/140 lb. hammer falling<br>30". |
| Continued on Sheet # 2<br>Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems.     |              |                            |                                                                          |                              |                                |                                                                                                          |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                     | Hole No. SH-73     |                         |                                                                                      |
|---------------------------|-------|-----------------------|-------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                                                                     | SHEET              |                         |                                                                                      |
| Savannah Harbor Widening  |       | Savannah, GA          |                                                                                     | OF 2 SHEETS        |                         |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                        | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                         | b     | c                     | d                                                                                   | e                  | f                       | g                                                                                    |
| -52.5                     |       |                       | Continued (See Remarks)                                                             |                    |                         |                                                                                      |
| -54.6                     | 55    |                       | No Recovery                                                                         |                    |                         | Note: Began coring<br>at 52.8'                                                       |
|                           |       |                       | SM-Green fine silty sand<br>with some sand lenses and<br>mica, partially indurated. |                    |                         | Pull 1<br>52.8' to 60.2'                                                             |
|                           |       |                       |                                                                                     |                    |                         | Run 7.4'                                                                             |
|                           |       |                       |                                                                                     |                    |                         | Rec 5.6'                                                                             |
|                           |       |                       |                                                                                     |                    |                         | C.L. 1.8' (Probably<br>from 52.8' to 54.6')                                          |
| -60.2                     | 60    |                       | Bottom of Hole; 60.2'                                                               |                    |                         |                                                                                      |

Hole No. SH-82

| DRILLING LOG                                                                                                                 |            | DIVISION       | INSTALLATION                                                                                                              |                         | SHEET 1<br>OF 1 SHEETS       |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|-------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            | South Atlantic | Savannah, GA                                                                                                              |                         |                              |                                                                                                       |
| 2. LOCATION (Coordinates or Station)<br>X-821690, Y-771180                                                                   |            |                | 10. SIZE AND TYPE OF BIT<br>3/8" ID split spoon                                                                           |                         | 5"                           |                                                                                                       |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                | 11. DAYUM FOR ELEVATION SHOWN (TBM or BBL)                                                                                |                         | Fish tail                    |                                                                                                       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-82                                                             |            |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                                                    |                         |                              |                                                                                                       |
| 5. NAME OF DRILLER<br>T. W. SCOTT                                                                                            |            |                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                                            |                         | DISTURBED<br>9               | UNDISTURBED<br>0                                                                                      |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                | 14. TO: NUMBER CORE BOXES                                                                                                 |                         | 0                            |                                                                                                       |
| 7. THICKNESS OF OVERBURDEN<br>49.6'                                                                                          |            |                | 15. ELEVATION GROUND WATER                                                                                                |                         |                              |                                                                                                       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                | 16. DATE HOLE STARTED<br>9 Sep 83                                                                                         |                         | COMPLETED<br>10 Sep 83       |                                                                                                       |
| 9. TOTAL DEPTH OF HOLE<br>49.6'                                                                                              |            |                | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                                         |                         |                              |                                                                                                       |
|                                                                                                                              |            |                | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                                                   |                         |                              |                                                                                                       |
|                                                                                                                              |            |                | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                                                                     |                         |                              |                                                                                                       |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0 | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                         | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g             |
|                                                                                                                              |            |                | Sea Water 0.0'-22.8'                                                                                                      |                         |                              | Note: Change of scale<br>at 22.0'                                                                     |
| -22.8                                                                                                                        | 22         |                | Bottom of Harbor: 22.8'                                                                                                   |                         |                              |                                                                                                       |
| -24.3                                                                                                                        |            |                | SP-Ian fine to medium poorly<br>graded sand with trace of<br>silt                                                         |                         | 1                            | Note: Set 6" casing<br>to 27.4'. Reset<br>casing to 33.0',<br>37.9' and 40.1'.                        |
| -25.8                                                                                                                        | 27         |                | Medium to coarse grained<br>with trace of fine gravel<br>Fine to medium grained with<br>no gravel                         |                         |                              |                                                                                                       |
| -28.8                                                                                                                        |            |                | Gray, medium to coarse<br>grained.                                                                                        |                         | 2                            | SAMPLE LAB<br>No. Class LL PL #1                                                                      |
| -31.8                                                                                                                        | 32         |                | Coarse grained, no silt                                                                                                   |                         | 2                            | SP NP NP NP 19                                                                                        |
| -33.3                                                                                                                        |            |                | Trace of fine gravel, layer<br>of blue fat clay from<br>34.5' to 34.8'                                                    |                         | 3                            | 4 SP NP NP NP 48                                                                                      |
| -34.8                                                                                                                        |            |                | Coarse grained with trace of<br>silt, fine gravel and layer<br>of fat clay from 35.8' to<br>36.0'                         |                         | 4                            |                                                                                                       |
| -37.8                                                                                                                        | 37         |                | Medium to coarse grained                                                                                                  |                         | 5                            |                                                                                                       |
| -42.3                                                                                                                        | 42         |                | Coarse grained with trace of<br>fine gravel, thin layer of<br>clayey sand from 43.2'-43.5'                                |                         | 6                            |                                                                                                       |
| -43.8                                                                                                                        |            |                | With 15% fine gravel                                                                                                      |                         | 7                            |                                                                                                       |
| -46.8                                                                                                                        | 47         |                | SM-Green fine silty sand<br>with trace of mica and fine<br>gravel.                                                        |                         | 8                            | Note: 47.9'-48.3' 100/0<br>cleaned out hole with<br>fishtail. 100/0                                   |
| -49.6                                                                                                                        |            |                | Bottom of Hole: 49.6'<br>Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                         | 9                            | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID split spoon w/140 lb.<br>hammer falling 30". |



Hole No. SH-83

| DRILLING LOG                                             |       | DIVISION                                                                                             | INSTALLATION                                                                                     |                         | SHEET 1                                        |                                                                                                         |
|----------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| PROJECT                                                  |       | South Atlantic                                                                                       | Savannah, GA.                                                                                    |                         | 1 of 1 SHEETS                                  |                                                                                                         |
| Savannah Harbor Widening                                 |       |                                                                                                      | 10. SIZE AND TYPE OF BIT                                                                         |                         | 1-3/8" ID splitspoon, 5"                       |                                                                                                         |
| 2. LOCATION (Coordinate or Station)                      |       |                                                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)                                                       |                         | fishtail                                       |                                                                                                         |
| X-820005, Y-773530                                       |       |                                                                                                      | MLW                                                                                              |                         |                                                |                                                                                                         |
| 3. DRILLING AGENCY                                       |       |                                                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                          |                         | Failing 314                                    |                                                                                                         |
| Savannah District                                        |       |                                                                                                      | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                   |                         | DISTURBED<br>8<br>UNDISTURBED<br>0             |                                                                                                         |
| 4. HOLE NO. (As shown on existing title and life number) |       | SH-83                                                                                                | 14. TOTAL NUMBER CORE BOXES                                                                      |                         |                                                |                                                                                                         |
| 5. NAME OF DRILLER                                       |       | T.W. SCOTT                                                                                           | 15. ELEVATION GROUND WATER                                                                       |                         |                                                |                                                                                                         |
| 6. DIRECTION OF HOLE                                     |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DES. FROM VERT. | 16. DATE HOLE                                                                                    |                         | STARTED<br>10 Sep 83<br>COMPLETED<br>11 Sep 83 |                                                                                                         |
| 7. THICKNESS OF OVERBURDEN                               |       | 45.8'                                                                                                | 17. ELEVATION TOP OF HOLE                                                                        |                         | 0.0'                                           |                                                                                                         |
| 8. DEPTH DRILLED INTO ROCK                               |       | 0.0'                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING                                                               |                         | %                                              |                                                                                                         |
| 9. TOTAL DEPTH OF HOLE                                   |       | 45.8'                                                                                                | 19. SIGNATURE OF INSPECTOR                                                                       |                         | James Arthur, Geologist                        |                                                                                                         |
| ELEVATION                                                | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO.                        | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                    |
| 0.0                                                      | 0     |                                                                                                      | Sea Water 0.0'-17.3'                                                                             |                         |                                                | Note change of scale<br>at 17.0'                                                                        |
| -17.3                                                    | 17    |                                                                                                      | Bottom of Harbor: 17.3'                                                                          |                         |                                                |                                                                                                         |
| -20.3                                                    | 22    |                                                                                                      | SP-Gray medium to coarse<br>poorly graded sand with<br>trace of fine gravel                      |                         | 1                                              | Note: Set 6" casing<br>to 17.3'                                                                         |
| -23.3                                                    | 27    |                                                                                                      | Tannish gray with trace<br>of silt                                                               |                         | 2                                              | Weight of rods with<br>hammer drove split-<br>spoon from 17.3' to<br>18.3'. Continued<br>drive to 18.8' |
| -24.8                                                    | 27    |                                                                                                      | SM-Tannish gray fine to<br>medium silty sand with<br>layer of gray<br>plastic silt               |                         | 3                                              | Reset casing to<br>24.2', 34.0' 35.8'<br>and 36.8'                                                      |
| -30.8                                                    | 32    |                                                                                                      | SP-Tannish gray fine<br>to medium poorly graded<br>sand with trace of silt                       |                         | 4                                              |                                                                                                         |
| -33.8                                                    | 37    |                                                                                                      | Gray, fine grained, trace of<br>mica                                                             |                         |                                                | SAITILE LAB                                                                                             |
| -35.3                                                    | 37    |                                                                                                      | Tannish gray, fine to medium<br>grained.                                                         |                         | 5                                              | No. Class LL PL PI                                                                                      |
| -39.8                                                    | 42    |                                                                                                      | Medium to coarse grained<br>with 15% fine gravel                                                 |                         |                                                | 1 SP NP NP NP 27                                                                                        |
| -45.8                                                    | 42    |                                                                                                      | Fine to medium grained with<br>trace of fine gravel.                                             |                         | 6                                              | 2 SC 11 55 21 34                                                                                        |
|                                                          | 42    |                                                                                                      | CL-Green micaceous lean clay.                                                                    |                         | 7                                              | 4 ST NP NP NP 56                                                                                        |
|                                                          | 42    |                                                                                                      | With 20% fine sand                                                                               |                         | 8                                              | 7 CH 105 34 71 30                                                                                       |
|                                                          | 42    |                                                                                                      | Bottom of Hole: 45.8'                                                                            |                         |                                                | 32.3' Ten blows<br>required to drive<br>splitspoon from 33.7'<br>to 33.8'                               |
|                                                          | 42    |                                                                                                      | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                         |                                                | 39.8' Casing stopped<br>following wash with<br>fishtail                                                 |
|                                                          | 42    |                                                                                                      |                                                                                                  |                         |                                                | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30".    |

Hole No. SH-84

| DRILLING LOG                                            |       | DIVISION                                                                                              | INSTALLATION                                                                            |                                                 | SHEET 1 OF 2 SHEETS |                                                                                             |
|---------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------|
| 1. PROJECT                                              |       | South Atlantic                                                                                        | Savannah                                                                                |                                                 |                     |                                                                                             |
| 2. LOCATION (Coordinates or Station)                    |       | Savannah Harbor Widening                                                                              |                                                                                         | 10. SIZE AND TYPE OF BIT 3/8" ID splitspoon &   |                     |                                                                                             |
| 3. DRILLING AGENCY                                      |       | X-819190, Y-775340                                                                                    |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL) 4X54 |                     |                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-84                                                                                                 |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL         |                     | carhalloy                                                                                   |
| 5. NAME OF DRILLER                                      |       | T.W. Scott, E. Mauldin                                                                                |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN      |                     | 11                                                                                          |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                         | 14. TOTAL NUMBER CORE BOXES                     |                     | 0                                                                                           |
| 7. THICKNESS OF OVERBURDEN                              |       | 50.1'                                                                                                 |                                                                                         | 15. ELEVATION GROUND WATER                      |                     | 0.0 MLW                                                                                     |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                                                  |                                                                                         | 16. DATE HOLE                                   |                     | STARTED 12 Sep 83 COMPLETED 12 Sep 83                                                       |
| 9. TOTAL DEPTH OF HOLE                                  |       | 50.1'                                                                                                 |                                                                                         | 17. ELEVATION TOP OF HOLE                       |                     | 0.0 MLW                                                                                     |
|                                                         |       |                                                                                                       |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING              |                     | 3                                                                                           |
|                                                         |       |                                                                                                       |                                                                                         | 19. SIGNATURE OF INSPECTOR                      |                     | James E. Bolen                                                                              |
|                                                         |       |                                                                                                       |                                                                                         | James E. Bolen                                  |                     |                                                                                             |
| ELEVATION                                               | DEPTH | LEGEND                                                                                                | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                                 | BOX OR SAMPLE NO.   | REMARKS (Drilling time, water loss, depth of weathering, etc., if any) (User)               |
| 0.0                                                     | 0     |                                                                                                       | Sea Water 0.0'-26.9'                                                                    |                                                 | JAR                 | Blows                                                                                       |
|                                                         | 10    |                                                                                                       |                                                                                         |                                                 |                     | Note: Change of scale @ 20.0'.                                                              |
|                                                         | 20    |                                                                                                       |                                                                                         |                                                 |                     | SAMPLE LAB                                                                                  |
|                                                         |       |                                                                                                       |                                                                                         |                                                 |                     | No. Class LL PL PI                                                                          |
|                                                         |       |                                                                                                       |                                                                                         |                                                 |                     | 2 SP NP NP NP                                                                               |
|                                                         |       |                                                                                                       |                                                                                         |                                                 |                     | 3 SP NP NP NP                                                                               |
|                                                         |       |                                                                                                       |                                                                                         |                                                 |                     | 7 MI 74 35 39                                                                               |
|                                                         |       |                                                                                                       |                                                                                         |                                                 |                     | 10 CH 113 39 74                                                                             |
|                                                         | 25    |                                                                                                       | Bottom of Harbor 26.9'                                                                  |                                                 |                     |                                                                                             |
|                                                         |       |                                                                                                       | SM-Gray silty coarse, medium sand low silt content                                      |                                                 | 1                   | Note: Weight of tool 26.9-27.5'                                                             |
|                                                         | 30    |                                                                                                       | Gray, black with traces of fine gravel and clay                                         |                                                 | 2                   | Set 6" diameter steel casing to 29.2'.                                                      |
|                                                         |       |                                                                                                       | Gray silty coarse medium sand, low silt content                                         |                                                 | 3                   |                                                                                             |
|                                                         |       |                                                                                                       |                                                                                         |                                                 | 4                   |                                                                                             |
|                                                         | 35    |                                                                                                       |                                                                                         |                                                 |                     |                                                                                             |
|                                                         |       |                                                                                                       |                                                                                         |                                                 | 5                   |                                                                                             |
|                                                         |       |                                                                                                       |                                                                                         |                                                 | 6                   |                                                                                             |
|                                                         | 40    |                                                                                                       | ML-Dark green clayey silt with 15% fine sand                                            |                                                 | 7                   | Note: Change of scale at 40.0'                                                              |
|                                                         |       |                                                                                                       |                                                                                         |                                                 | 8                   |                                                                                             |
|                                                         | 42    |                                                                                                       | Continued on Sheet 2                                                                    |                                                 |                     |                                                                                             |
|                                                         |       |                                                                                                       | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                 |                     | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE        |                                                                                                      | Hole No. SH-84          |                                |                                                                                      |
|-------------------------------------|-------|------------------------------|------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       | INSTALLATION<br>Savannah, GA |                                                                                                      | SHEET 2<br>OF 2 SHEETS  |                                |                                                                                      |
| ELEVATION                           | DEPTH | LEGEND                       | CLASSIFICATION OF MATERIALS<br>(Description)                                                         | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -42.0                               | 42.0  | c                            | d                                                                                                    | e                       | 8                              | Blow<br>Began Coring at 42.5'                                                        |
| -42.5                               |       |                              | ML-Dark green clayey silt,<br>with 15% fine sand                                                     |                         |                                |                                                                                      |
|                                     | 44    |                              | Core Loss-42.5'-45.6'<br>believed to be clayey silt,<br>easily washed out, rapid<br>bit penetration. | 0<br>RQD                |                                | Pull 1<br>From 42.5' To 45.6'<br>Run 3.1' Rec 0.0'<br>CL 3.1'                        |
|                                     |       |                              |                                                                                                      | 0                       |                                | All core washed out.<br><br>Note: Change of scale<br>at 45.0'                        |
| -45.6                               | 45    |                              | ML-Dark green clayey silt,<br>with 15% fine sand                                                     | 45.6'                   | 9<br>10<br>11                  | Note: Resume split-<br>spooning at 45.6'                                             |
|                                     | 50    |                              |                                                                                                      |                         |                                |                                                                                      |
| -50.1                               |       |                              |                                                                                                      | Bottom of Hole: 50.1'   |                                |                                                                                      |

Hole No. SH-85

| DRILLING LOG                                                                                                                 |              | DIVISION       | INSTALLATION                                                                                                             |                                | SHEET 1<br>OF 2 SHEETS       |                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              | South Atlantic | Savannah, GA                                                                                                             |                                |                              |                                                                                                      |
| 2. LOCATION (Coordinates or Station)<br>X-821038, Y-771926                                                                   |              |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                                            |                                |                              |                                                                                                      |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)<br>MLW                                                                        |                                |                              |                                                                                                      |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-85                                                             |              |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                                                   |                                |                              |                                                                                                      |
| 5. NAME OF DRILLER<br>T. W. Scott and Earl Mauldin                                                                           |              |                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                                           |                                | DISTURBED<br>12              | UNDISTURBED<br>0                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                | 14. TOTAL NUMBER CORE BOXES                                                                                              |                                |                              |                                                                                                      |
| 7. THICKNESS OF OVERBURDEN<br>50.0'                                                                                          |              |                | 15. ELEVATION GROUND WATER<br>0.0 MLW                                                                                    |                                |                              |                                                                                                      |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                | 16. DATE HOLE<br>13 Sep 83                                                                                               |                                | COMPLETED                    |                                                                                                      |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |              |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                                                     |                                |                              |                                                                                                      |
|                                                                                                                              |              |                | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                                                  |                                |                              |                                                                                                      |
|                                                                                                                              |              |                | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen Geologist                                                                   |                                | J. E. Bolen                  |                                                                                                      |
| ELEVATION<br>0.0 a                                                                                                           | DEPTH<br>0 b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                        | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g Blows      |
|                                                                                                                              | 10           |                | Sea Water 0.0'-21.5'                                                                                                     |                                |                              | Note: Change of scale<br>at 20.0'                                                                    |
| -21.5                                                                                                                        | 20           |                | Bottom of Harbor: 21.5'                                                                                                  |                                |                              |                                                                                                      |
| -23.0                                                                                                                        | 25           |                | Wood chips, fibers (old<br>piling ?)                                                                                     |                                | 1                            |                                                                                                      |
|                                                                                                                              | 25           |                | SM-Gray, brown silty coarse,<br>medium sand (low silt<br>content)                                                        |                                | 2                            | 7                                                                                                    |
|                                                                                                                              | 30           |                | Gray silty medium grained<br>sand, with a trace of<br>coarse sand                                                        |                                | 3                            |                                                                                                      |
|                                                                                                                              | 35           |                |                                                                                                                          |                                | 4                            |                                                                                                      |
|                                                                                                                              | 40           |                | Gray silty medium fine<br>sand                                                                                           |                                | 5                            |                                                                                                      |
|                                                                                                                              | 40           |                | ML-Dark green clayey silt<br>with 10% fine sand                                                                          |                                | 6                            |                                                                                                      |
| -39.5                                                                                                                        | 45           |                |                                                                                                                          |                                | 7                            |                                                                                                      |
|                                                                                                                              | 45           |                |                                                                                                                          |                                | 8                            |                                                                                                      |
| -45.0                                                                                                                        | 45           |                |                                                                                                                          |                                | 9                            |                                                                                                      |
|                                                                                                                              |              |                | Continued on Sheet 2<br>Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                |                              | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30". |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                       | 0.0' MLW                |                                | Hole No. SH-85                                                                       |       |
|---------------------------|-------|-----------------------|-----------------------------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                   |       |                       | INSTALLATION                                                          |                         |                                | SHEET 2                                                                              |       |
| Savannah Harbor Widening  |       |                       | Savannah, GA                                                          |                         |                                | OF 2 SHEETS                                                                          |       |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                          | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |       |
| -49.0                     | 15 ft |                       | ML-Dark green clayey silt<br>with 10% fine sand<br>with 15% fine sand |                         | 9                              |                                                                                      | Blows |
|                           | 10    |                       |                                                                       |                         | 57                             |                                                                                      |       |
|                           | 11    |                       |                                                                       |                         | 61                             |                                                                                      |       |
|                           | 12    |                       |                                                                       |                         | 58                             |                                                                                      |       |
| -50.0                     | 50    |                       | Bottom of Hole: 50.0'                                                 |                         |                                |                                                                                      | 61    |



| DRILLING LOG                                                                                                                 |             | DIVISION     |                                                                                         | INSTALLATION                                                                  |                              | Hole No. SH-87                                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|--|
| South Atlantic                                                                                                               |             | Savannah, GA |                                                                                         | SHEET 1 OF 2 SHEETS                                                           |                              |                                                                                                     |  |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |             |              |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                 |                              |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-826323, Y-765959                                                                   |             |              |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MSL                             |                              |                                                                                                     |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |              |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falline 114                        |                              |                                                                                                     |  |
| 4. HOLE NO. (As shown on plan or title and file number)<br>SH-87                                                             |             |              |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 9 UNDISTURBED 0       |                              |                                                                                                     |  |
| 5. NAME OF DRILLER<br>E. Maulden & T. Scott                                                                                  |             |              |                                                                                         | 14. TOTAL NUMBER CORE BOXES                                                   |                              |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |              |                                                                                         | 15. ELEVATION GROUND WATER<br>0.0' MHW                                        |                              |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>50.0'                                                                                          |             |              |                                                                                         | 16. DATE HOLE<br>STARTED 14 Sep 83 COMPLETED 15 Sep 83                        |                              |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |              |                                                                                         | 17. ELEVATION TOP OF HOLE 0.0' MLW                                            |                              |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |             |              |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING                                            |                              |                                                                                                     |  |
|                                                                                                                              |             |              |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist <i>James E. Bolen</i> |                              |                                                                                                     |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>c  | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e                                                       | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g              |  |
|                                                                                                                              | 10          |              | Sea Water 0.0'-19.6'                                                                    |                                                                               |                              | Note: Change of scale at 10.0'                                                                      |  |
|                                                                                                                              | 15          |              |                                                                                         |                                                                               |                              | SAMPLE LAB                                                                                          |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               |                              | No. Class LL PL PI                                                                                  |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               |                              | 3 SP NP NP NP                                                                                       |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               |                              | 7 SP NP NP NP                                                                                       |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               |                              | 9 SC-H 65 26 39                                                                                     |  |
| -19.6                                                                                                                        | 20          |              | Bottom of Harbor 19.6'                                                                  |                                                                               |                              |                                                                                                     |  |
|                                                                                                                              |             |              | SM-Gray, brown silty coarse medium sand with 5% rounded fine gravel, subangular grains  |                                                                               | 1                            | Note: Weight of hammer 19.6'-20.5'                                                                  |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               | 2                            | 7                                                                                                   |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               |                              | 15                                                                                                  |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               | 3                            | 21                                                                                                  |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               | 4                            | 18                                                                                                  |  |
| -28.0                                                                                                                        | 30          |              | No Sample                                                                               |                                                                               |                              | 46                                                                                                  |  |
|                                                                                                                              |             |              |                                                                                         |                                                                               |                              | Note: Because of mathematical error, accidentally washed out from 28.0'-32.0' while setting casing. |  |
| -32.0                                                                                                                        |             |              | SM-Gray, brown silty coarse medium sand with 5% rounded fine gravel                     |                                                                               |                              | 17                                                                                                  |  |
| -35.0                                                                                                                        | 35          |              |                                                                                         |                                                                               | 5                            | 32                                                                                                  |  |
|                                                                                                                              |             |              | Continued on Sheet 2                                                                    |                                                                               |                              |                                                                                                     |  |
|                                                                                                                              |             |              | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                               |                              | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon with 140lb hammer falling 30".        |  |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE                                                             |                                                                                                                                                      | Hole No. SH-87          |                         |                                                                                        |
|----------------------------------|-------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|----------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       | INSTALLATION Savannah, GA                                                         |                                                                                                                                                      | SHEET 2 OF 2 SHEETS     |                         |                                                                                        |
| ELEVATION                        | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                         | % CORE<br>RECOVER<br>RY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Flowline, time, water level, depth of<br>weathering, etc., if significant) |
| -35.0                            | 35    |  | SM-Gray, brown silty coarse, medium sand with 10% fine gravel, low silt content, <u>subangular grains</u><br>Silty coarse sand with some fine gravel | 1                       | 1AR                     |                                                                                        |
|                                  | 6     |                                                                                   |                                                                                                                                                      |                         | 40                      |                                                                                        |
|                                  |       |                                                                                   |                                                                                                                                                      |                         | 43                      |                                                                                        |
|                                  | 7     |                                                                                   |                                                                                                                                                      |                         | 33                      |                                                                                        |
|                                  |       |                                                                                   |                                                                                                                                                      |                         | 18                      |                                                                                        |
|                                  | 40    |                                                                                   |                                                                                                                                                      |                         |                         | 26                                                                                     |
|                                  | 45    |                                                                                   |                                                                                                                                                      |                         | 8                       | 51                                                                                     |
|                                  |       |                                                                                   |                                                                                                                                                      |                         |                         | 17                                                                                     |
| -48.0                            |       |                                                                                   |                                                                                                                                                      |                         |                         | 12                                                                                     |
|                                  | 50    |                                                                                   | ML-Dark green, clayey silt with 25% fine sand                                                                                                        |                         | 9                       | 37                                                                                     |
| -50.0                            |       |                                                                                   | Bottom of Hole: 50.0'                                                                                                                                |                         |                         | 62                                                                                     |



| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah, GA                                                          | Hole No. SH-88<br>SHEET 1<br>OF 2 SHEETS |                              |                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------------------------------------------------------------------------|------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |                            | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                         |                                          |                              |                                                                                                        |
| 2. LOCATION (Coordinates or Station)<br>X-827065, Y-765290                                                                   |            |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)<br>MLW                                     |                                          |                              |                                                                                                        |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                |                                          |                              |                                                                                                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-88                                                             |            |                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 7 UNDISTURBED 0               |                                          |                              |                                                                                                        |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |            |                            | 14. TOTAL NUMBER CORE BOXES                                                           |                                          |                              |                                                                                                        |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            | 15. ELEVATION GROUND WATER 0.0 MLW                                                    |                                          |                              |                                                                                                        |
| 7. THICKNESS OF OVERBURDEN 50.2'                                                                                             |            |                            | 16. DATE HOLE STARTED 16 Sep 83 COMPLETED 17 Sep 83                                   |                                          |                              |                                                                                                        |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            | 17. ELEVATION TOP OF HOLE 0.0' MLW                                                    |                                          |                              |                                                                                                        |
| 9. TOTAL DEPTH OF HOLE 50.2'                                                                                                 |            |                            | 18. TOTAL CORE RECOVERY FOR BORING %                                                  |                                          |                              |                                                                                                        |
|                                                                                                                              |            |                            | 19. SIGNATURE OF INSPECTOR<br>T.W. Scott & James E. Bolen <i>James E. Bolen</i>       |                                          |                              |                                                                                                        |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                     | % CORE<br>RECOVERY<br>e                  | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g              |
|                                                                                                                              |            |                            | Sea Water 0.0'-23.2'                                                                  |                                          |                              | Blows                                                                                                  |
|                                                                                                                              | 10         |                            |                                                                                       |                                          |                              |                                                                                                        |
|                                                                                                                              | 20         |                            |                                                                                       |                                          |                              | Note: Change of scale<br>20.0'                                                                         |
|                                                                                                                              |            |                            | Bottom of Harbor 23.2'                                                                |                                          |                              |                                                                                                        |
| -23.2                                                                                                                        | 25         |                            | SM-Gray, brown silty coarse,<br>medium sand, low silt content                         |                                          | 1                            | 24                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | SAMPLE LAR 20                                                                                          |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | No. Class LL PL PI                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          | 2                            | SP-SM NP NP NP 23                                                                                      |
|                                                                                                                              | 30         |                            |                                                                                       |                                          | 2                            | 6 SC-H 71 30 41 25                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | 20                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | 19                                                                                                     |
|                                                                                                                              | 25         |                            | Gray                                                                                  |                                          | 3                            | 29                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | 60                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | 16                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          | 4                            | 40                                                                                                     |
|                                                                                                                              | 40         |                            |                                                                                       |                                          |                              | 16                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          |                              | 22                                                                                                     |
|                                                                                                                              |            |                            |                                                                                       |                                          | 5                            | 20                                                                                                     |
| -45.0                                                                                                                        | 45         |                            |                                                                                       |                                          |                              | 70                                                                                                     |
|                                                                                                                              |            |                            | Continued on Sheet 2                                                                  |                                          |                              | Blows Per Foot: Number<br>required to drive 1 3/8"<br>1) splitspoon with 140 lb<br>hammer falling 30". |
|                                                                                                                              |            |                            | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification |                                          |                              |                                                                                                        |

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE |                                                                | 0.0 MLW                 |                         | Hole No. SH-88                                                                       |       |
|-------------------------------------|-------|-----------------------|----------------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT<br>Savannah Harbor Widening |       |                       | INSTALLATION<br>Savannah, GA                                   |                         |                         | SHEET 2<br>OF 2 SHEETS                                                               |       |
| ELEVATION                           | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                   | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |       |
| 45.0                                | 45.0  | c                     | d                                                              | e                       | f                       | g                                                                                    | Blows |
| 45.7                                |       |                       | SM-Gray silty coarse medium<br>sand (moderate silt<br>content) |                         | 6                       |                                                                                      | 61    |
|                                     |       |                       | ML-Dark green, clayey silt,<br>with 15% fine sand              |                         | 7                       |                                                                                      | 50    |
| 50.2                                | 50    |                       |                                                                |                         |                         |                                                                                      | 37    |
|                                     |       |                       | Bottom of Hole: 50.2'                                          |                         |                         |                                                                                      | 58    |

| DRILLING LOG                                                                                                                 |                     | DIVISION<br>South Atlantic |                                                                                                  | INSTALLATION<br>Savannah, GA                                           |                              | Hole No. SH-89<br>SHEET 1<br>OF 1 SHEETS                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah River Widening                                                                                        |                     |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>3/8" ID splitspoon                         |                              |                                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>X-827760, Y-764580                                                                   |                     |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MWL                      |                              |                                                                                                       |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |                     |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                      |                              |                                                                                                       |  |
| 4. HOLE NO. (As shown on drawing title and title marked)<br>SH-89                                                            |                     |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                             |                              | DISTURBED<br>6                                                                                        |  |
| 5. NAME OF DRILLER<br>Earl Maulden, P.W. Scott                                                                               |                     |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                       |                              | UNDISTURBED<br>0                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                     |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>0.0 MLW                                  |                              | 16. DATE HOLE<br>STARTED 17 Sep 83<br>COMPLETED 17 Sep 83                                             |  |
| 7. THICKNESS OF OVERBURDEN<br>50.5' (Water & Soil)                                                                           |                     |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                   |                              |                                                                                                       |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |                     |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>1                                |                              |                                                                                                       |  |
| 9. TOTAL DEPTH OF HOLE<br>50.5'                                                                                              |                     |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist James E. Bolen |                              |                                                                                                       |  |
| ELEVATION<br>(f. u. s.)                                                                                                      | DEPTH<br>(f. u. s.) | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                                | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g             |  |
|                                                                                                                              |                     |                            | Sea Water 0.0'-33.0'                                                                             |                                                                        |                              |                                                                                                       |  |
|                                                                                                                              | 10                  |                            |                                                                                                  |                                                                        |                              |                                                                                                       |  |
|                                                                                                                              | 20                  |                            |                                                                                                  |                                                                        |                              |                                                                                                       |  |
|                                                                                                                              | 30                  |                            |                                                                                                  |                                                                        |                              |                                                                                                       |  |
| -33.0                                                                                                                        |                     |                            | Bottom of Harbor: 33.0'                                                                          |                                                                        |                              | Note: Change of scale<br>at 30.0'                                                                     |  |
|                                                                                                                              | 35                  |                            | MH-Greenish black fat clayey<br>silt with some organic<br>matter and a trace of fine<br>sand     |                                                                        | 1                            | Note: Weight of tools<br>33.0'-34.1'                                                                  |  |
| -36.6                                                                                                                        |                     |                            | MH-Dark green silty, medium<br>sand, with some fine sand                                         |                                                                        | 2                            | After driving to<br>37.1'. Cleaned out<br>boring to only 37.0'.<br>Following drive is<br>37.0'-38.5'. |  |
|                                                                                                                              | 40                  |                            |                                                                                                  |                                                                        | 3                            |                                                                                                       |  |
|                                                                                                                              |                     |                            | Silty coarse medium sand                                                                         |                                                                        | 4                            |                                                                                                       |  |
|                                                                                                                              | 45                  |                            |                                                                                                  |                                                                        | 5                            |                                                                                                       |  |
| -44.5                                                                                                                        |                     |                            | MH-Dark green fat clayey<br>silt                                                                 |                                                                        |                              |                                                                                                       |  |
|                                                                                                                              | 50                  |                            |                                                                                                  |                                                                        | 6                            |                                                                                                       |  |
| -50.5                                                                                                                        |                     |                            | Bottom of Hole 50.5'                                                                             |                                                                        |                              |                                                                                                       |  |
|                                                                                                                              |                     |                            | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                                                        |                              | Blows per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30".  |  |

Hole No. SH-90

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                                                  | INSTALLATION<br>Savannah, GA                                          |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                        |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>MLW                                       |                                |                                                                                                                                               |  |
| 2. LOCATION (Coordinates or Station)<br>X-829915, Y-762450                                                                   |            |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                     |                                |                                                                                                                                               |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CMC 75                     |                                |                                                                                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-90                                                             |            |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                            |                                | DISTURBED<br>5                                                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                                       |                                | UNDISTURBED<br>0                                                                                                                              |  |
| 5. NAME OF DRILLER<br>Earl Moulden                                                                                           |            |                            |                                                                                                  | 14. TOE NUMBER CORE BOXES ( )<br>0                                    |                                |                                                                                                                                               |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>0.0 MLW                                 |                                |                                                                                                                                               |  |
| 7. THICKNESS OF OVERBURDEN<br>50.0'                                                                                          |            |                            |                                                                                                  | 16. DATE HOLE<br>17 Sep 83                                            |                                |                                                                                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                                 |                                |                                                                                                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |            |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>%                               |                                |                                                                                                                                               |  |
|                                                                                                                              |            |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>James E. Rolan Geologist James E. Rolan |                                |                                                                                                                                               |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>b                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                               | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f                                                     |  |
|                                                                                                                              | 10         |                            | Sea Water 0.0'-40.7'                                                                             |                                                                       |                                |                                                                                                                                               |  |
|                                                                                                                              | 20         |                            |                                                                                                  |                                                                       |                                | Note: Change of scale<br>at 40.0'.                                                                                                            |  |
|                                                                                                                              | 30         |                            |                                                                                                  |                                                                       |                                | SAMPLE LAB                                                                                                                                    |  |
|                                                                                                                              | 40         |                            | Bottom of Harbor: 40.7'                                                                          |                                                                       |                                | No. Class LL FL PI                                                                                                                            |  |
| -40.7                                                                                                                        |            |                            | MH-Dark green fat clayey<br>silt                                                                 |                                                                       | 2                              | 2 SM NP NP NP                                                                                                                                 |  |
| -40.9                                                                                                                        |            |                            | SM-Gray black, silty medium<br>fine sand with a little clay<br>(in clay lenses)                  |                                                                       | 3                              | 4 CH 109 39 70                                                                                                                                |  |
| -45.5                                                                                                                        | 45         |                            | ML-Green clayey silt, with<br>20% fine sand.                                                     |                                                                       | 4                              | Note: Weight of tools<br>40.7'-40.9'.<br>After driving to 43.9'. Set 6" diameter<br>steel casing to 44.0'. Following<br>drive was 44.0'-45.5' |  |
| -50.0                                                                                                                        | 50         |                            | Bottom of Hole 50.0'                                                                             |                                                                       | 5                              | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30".                                          |  |
|                                                                                                                              |            |                            | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                                                       |                                |                                                                                                                                               |  |

| DRILLING LOG                                                                                                                 |            |             | DIVISION<br>South Atlantic                                                                                                |                              | INSTALLATION<br>Savannah, GA                                               |                                                                                                        | Hole No. SH-94<br>SHEET 1<br>OF 1 SHEETS |                  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------|------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |             |                                                                                                                           |                              | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                              |                                                                                                        |                                          |                  |
| 2. LOCATION (Coordinates or Station)<br>X-823605, Y-768807                                                                   |            |             |                                                                                                                           |                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MLW)<br>MLW                          |                                                                                                        |                                          |                  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |             |                                                                                                                           |                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                     |                                                                                                        |                                          |                  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-94                                                             |            |             |                                                                                                                           |                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                             |                                                                                                        | DISTURBED<br>3                           | UNDISTURBED<br>0 |
| 5. NAME OF DRILLER<br>E. Maulden and T.W. Scott                                                                              |            |             |                                                                                                                           |                              | 14. TOTAL NUMBER CORE BOXES<br>0                                           |                                                                                                        |                                          |                  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             |                                                                                                                           |                              | 15. ELEVATION GROUND WATER<br>0.0 MLW                                      |                                                                                                        |                                          |                  |
| 7. THICKNESS OF OVERBURDEN 50.0' (including water)                                                                           |            |             |                                                                                                                           |                              | 16. DATE HOLE STARTED 20 Sep 81 COMPLETED 22 Sep 83                        |                                                                                                        |                                          |                  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |             |                                                                                                                           |                              | 17. ELEVATION TOP OF HOLE 0.0 MLW                                          |                                                                                                        |                                          |                  |
| 9. TOTAL DEPTH OF HOLE 50.0'                                                                                                 |            |             |                                                                                                                           |                              | 18. TOTAL CORE RECOVERY FOR BORING                                         |                                                                                                        |                                          |                  |
|                                                                                                                              |            |             |                                                                                                                           |                              | 19. SIGNATURE OF INSPECTOR<br>James Bolen, Geologist <i>James B. Bolen</i> |                                                                                                        |                                          |                  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                         | % CORE<br>RECOVER-<br>Y<br>e | BOX OR<br>SAMPLE<br>NO.<br>f                                               | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g              |                                          |                  |
|                                                                                                                              |            |             | Sea Water 0.0'-41.2'                                                                                                      |                              |                                                                            | Blows                                                                                                  |                                          |                  |
|                                                                                                                              | 10         |             |                                                                                                                           |                              |                                                                            | Note: Change of scale<br>at 40.0'                                                                      |                                          |                  |
|                                                                                                                              | 20         |             |                                                                                                                           |                              |                                                                            | SAITILE LAB                                                                                            |                                          |                  |
|                                                                                                                              | 30         |             |                                                                                                                           |                              |                                                                            | No Class LL PL PI                                                                                      |                                          |                  |
|                                                                                                                              | 40         |             | Bottom of Harbor: 41.2'                                                                                                   |                              |                                                                            | 1 CM 116 34 P2                                                                                         |                                          |                  |
| -41.2                                                                                                                        |            |             |                                                                                                                           |                              |                                                                            | 2 SC-II 59 27 32                                                                                       |                                          |                  |
|                                                                                                                              |            |             | MH-Dark gray fat clayey silt<br>with a little fine sand                                                                   |                              | 1                                                                          | Note: 44.2' set 6"<br>diameter steel casing                                                            |                                          |                  |
| -44.0                                                                                                                        |            |             |                                                                                                                           |                              |                                                                            | to 44.0'                                                                                               |                                          |                  |
|                                                                                                                              | 45         |             | ML-Green clayey silt with<br>30% fine sand.                                                                               |                              | 2                                                                          | Following drive was<br>44.0'-45.5'                                                                     |                                          |                  |
|                                                                                                                              |            |             |                                                                                                                           |                              |                                                                            | 64                                                                                                     |                                          |                  |
|                                                                                                                              |            |             |                                                                                                                           |                              |                                                                            | 57                                                                                                     |                                          |                  |
| -50.0                                                                                                                        | 50         |             | Bottom of Hole: 50.0'<br>Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                              | 3                                                                          | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon with 140 lb<br>hammer falling 30". |                                          |                  |
|                                                                                                                              |            |             |                                                                                                                           |                              |                                                                            | 42                                                                                                     |                                          |                  |

Hole No. SH-95

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                           | INSTALLATION<br>Savannah, GA                                                  |                                | SHEET 1<br>OF 2 SHEETS                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                                           | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon &                               |                                |                                                                                                   |  |
| 2. LOCATION (Coordinate or Station)<br>X-828501 Y-763920                                                                     |       |                            |                                                                                                                           | 11. DAYUM FOR ELEVATION SHOWN (LHM = MLW)<br>MLW 4334 Diamond Coring Bit      |                                |                                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                        |                                |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and life number)<br>SH-95                                                             |       |                            |                                                                                                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 9 UNDISTURBED 0       |                                |                                                                                                   |  |
| 5. NAME OF DRILLER<br>I.N. SCOTT                                                                                             |       |                            |                                                                                                                           | 14. TOTAL NUMBER CORE BOXES 1                                                 |                                |                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                           | 15. ELEVATION GROUND WATER 0.0 MLW                                            |                                |                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 51.5'                                                                                             |       |                            |                                                                                                                           | 16. DATE HOLE STARTED 21 Sep 83 COMPLETED 21 Sep 83                           |                                |                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                                           | 17. ELEVATION TOP OF HOLE 0.0 MLW                                             |                                |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 51.5'                                                                                                 |       |                            |                                                                                                                           | 18. TOTAL CORE RECOVERY FOR BORING 40 %                                       |                                |                                                                                                   |  |
|                                                                                                                              |       |                            |                                                                                                                           | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist <i>James E. Bolen</i> |                                |                                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                              | % CORE<br>RECOVER-<br>Y                                                       | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)              |  |
| 0.0                                                                                                                          | 0     |                            | Sea Water 0.0'-16.0'                                                                                                      |                                                                               |                                | Note: Change of scale<br>10.0'                                                                    |  |
|                                                                                                                              | 10    |                            |                                                                                                                           |                                                                               |                                | SATTLE LAB<br>No. Class LL PL PI                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                                           |                                                                               |                                | 3 CL 48 27 21                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                                           |                                                                               |                                | 4 MH 57 38 19                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                                           |                                                                               |                                | 9 CH 60 29 31                                                                                     |  |
| -16.0                                                                                                                        |       |                            | Bottom of Harbor 16.0'                                                                                                    |                                                                               |                                |                                                                                                   |  |
|                                                                                                                              | 20    |                            | CH-Gray silty fat clay with<br>10% medium sand                                                                            |                                                                               | 1                              | Note: 16.0'-18.1'<br>weight of tools.                                                             |  |
|                                                                                                                              |       |                            |                                                                                                                           |                                                                               |                                | Note: At 21.1' set<br>casing to 21.0'.<br>Weight of tools<br>21.0'-27.0'                          |  |
|                                                                                                                              | 25    |                            |                                                                                                                           |                                                                               | 2                              |                                                                                                   |  |
|                                                                                                                              |       |                            |                                                                                                                           |                                                                               |                                |                                                                                                   |  |
| -28.5                                                                                                                        |       |                            | ML-Dark gray clayey silt,<br>with 10% fine sand                                                                           |                                                                               | 3                              |                                                                                                   |  |
|                                                                                                                              | 30    |                            |                                                                                                                           |                                                                               | 4                              |                                                                                                   |  |
|                                                                                                                              |       |                            |                                                                                                                           |                                                                               |                                |                                                                                                   |  |
| -31.5                                                                                                                        |       |                            | SH-Gray silty coarse, fine<br>sand (moderate silt content)                                                                |                                                                               | 5                              |                                                                                                   |  |
|                                                                                                                              | 35    |                            |                                                                                                                           |                                                                               |                                |                                                                                                   |  |
| -35.0                                                                                                                        |       |                            | Continued on Sheet 2<br>Note: Soils field classified<br>in accordance with the<br>Unified Soils Classification<br>System. |                                                                               | 6                              | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140"<br>hammer falling 30". |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                        | Hole No. SH-95      |                   |                                                                                               |
|---------------------------|-------|-----------------------|--------------------------------------------------------|---------------------|-------------------|-----------------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                                        | SHEET 2 OF 2 SHEETS |                   |                                                                                               |
| Savannah Harbor Widening  |       | Savannah, GA          |                                                        |                     |                   |                                                                                               |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)              | % CORE RECOVERY     | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                |
| -38.0                     | 35.6  | c                     | d                                                      | e                   | f                 | g Blows                                                                                       |
|                           |       |                       | SM-Gray silty coarse fine sand (moderate silt content) |                     | 6                 | 71                                                                                            |
|                           |       |                       |                                                        |                     |                   | 39                                                                                            |
|                           | 40    |                       |                                                        |                     | 7                 | Note: Change of scale at 45.0'                                                                |
|                           |       |                       |                                                        |                     |                   | 50                                                                                            |
|                           |       |                       |                                                        |                     |                   | 43                                                                                            |
|                           |       |                       |                                                        |                     |                   | 49                                                                                            |
|                           |       |                       |                                                        |                     | 8                 | 51                                                                                            |
| -45.0                     | 45    |                       | ML-Green clayey silty with 10% fine sand               |                     |                   | 100/0.9                                                                                       |
|                           | 46    |                       |                                                        |                     | 9                 |                                                                                               |
|                           |       |                       |                                                        |                     |                   | 100                                                                                           |
|                           | 47    |                       | 46.5'-48.5' Core is crumbled, broken                   |                     | Box 1             | Pull 1 From 46.5' To 51.5' Run 5.0' Rec 2.0' CL 3.0' Penetration Rate: 6.2 (minutes per foot) |
|                           | 48    |                       |                                                        | 40 RQD N/A          |                   |                                                                                               |
| -48.5                     |       |                       |                                                        |                     | 48.5              | Note: 2.0' of core left in hole. Note: Change of scale at 50.0'                               |
|                           | 49    |                       | 48.5'-49.5' Core Loss washes out by drill water        |                     |                   |                                                                                               |
| -49.5                     |       |                       |                                                        | 49.5                |                   |                                                                                               |
|                           | 50    |                       | ML-Green clayey silt with 10% fine sand                |                     |                   |                                                                                               |
|                           | 51    |                       |                                                        |                     |                   |                                                                                               |
| -51.5                     |       |                       | Bottom of Hole: 51.5'                                  |                     |                   | Note: Depth figure in column "e" is taped depth after run.                                    |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                         | INSTALLATION<br>Savannah, GA                                                     |                                | Hole No. SH-97<br>SHEET 1<br>OF 1 SHEETS                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                         | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon                                 |                                |                                                                                             |  |
| 2. LOCATION (Coordinates or Station)<br>X 822345 Y 770418                                                                    |       |                            |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (78M or ASL)<br>MLW                                |                                |                                                                                             |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                           |                                |                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-97                                                             |       |                            |                                                                                         | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN<br>DISTURBED: 4<br>UNDISTURBED: 0 |                                |                                                                                             |  |
| 5. NAME OF DRILLER<br>E. Maulden                                                                                             |       |                            |                                                                                         | 14. TOTAL NUMBER CORE BOXES<br>0                                                 |                                |                                                                                             |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                         | 15. ELEVATION GROUND WATER<br>0.0 MLW                                            |                                |                                                                                             |  |
| 7. THICKNESS OF OVERBURDEN<br>50.0                                                                                           |       |                            |                                                                                         | 16. DATE HOLE<br>STARTED: 22 Sep 83<br>COMPLETED: 23 Sep 83                      |                                |                                                                                             |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |       |                            |                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                             |                                |                                                                                             |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |       |                            |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                        |                                |                                                                                             |  |
|                                                                                                                              |       |                            |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>James Bolen, Geologist <i>James Bolen</i>          |                                |                                                                                             |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOVERY                                                               | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)        |  |
| 0.0                                                                                                                          | 0     |                            |                                                                                         |                                                                                  |                                | SAMPLE LAB<br>No. Class LL PL PI                                                            |  |
|                                                                                                                              | 10    |                            | Sea Water 0.0'-40.2'                                                                    |                                                                                  |                                | 1 SP NP NP NP                                                                               |  |
|                                                                                                                              | 20    |                            |                                                                                         |                                                                                  |                                | 2 SM 40 29 11                                                                               |  |
|                                                                                                                              | 30    |                            |                                                                                         |                                                                                  |                                | 3 SC-H 66 28 38                                                                             |  |
|                                                                                                                              | 40    |                            | Bottom of Harbor 40.2'                                                                  |                                                                                  |                                | 4 SC-H 51 28 23                                                                             |  |
| -40.2                                                                                                                        | 40    |                            | SM-Brown silty coarse, fine sand, slightly clayey                                       |                                                                                  | 1                              | Note: Weight of tools 40.2'-40.7'. 17                                                       |  |
| -42.2                                                                                                                        | 42    |                            | SC-Green clayey medium fine sand, with 10% fine gravel                                  |                                                                                  | 2                              | At 43.7' set casing to 44.0'. 32                                                            |  |
| -44.0                                                                                                                        | 44    |                            | ML-Green clayey silt with 35% fine sand                                                 |                                                                                  | 3                              |                                                                                             |  |
|                                                                                                                              | 45    |                            |                                                                                         |                                                                                  |                                | 51                                                                                          |  |
|                                                                                                                              | 50    |                            |                                                                                         |                                                                                  |                                | 67                                                                                          |  |
| -50.0                                                                                                                        | 50    |                            | Bottom of Hole: 50.0'                                                                   |                                                                                  | 4                              | 80                                                                                          |  |
|                                                                                                                              |       |                            | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                                  |                                | 86                                                                                          |  |
|                                                                                                                              |       |                            |                                                                                         |                                                                                  |                                | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |  |



Hole No. SH-97A

| DRILLING LOG                                            |             | DIVISION                                                                                             |                                                                                                      | INSTALLATION                             |                                | SHEET                                                                                            |  |
|---------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT                                              |             | South Atlantic                                                                                       |                                                                                                      | Savannah District                        |                                | 1 OF 2 SHEETS                                                                                    |  |
| 2. LOCATION (Coordinates or Station)                    |             | X-822560 Y-770580                                                                                    |                                                                                                      | 10. SIZE AND TYPE OF BIT                 |                                | 1 3/8" Splitspoon                                                                                |  |
| 3. DRILLING AGENCY                                      |             | Savannah District                                                                                    |                                                                                                      | 11. DATUM FOR ELEVATION                  |                                | MHW                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) |             | SH-97A                                                                                               |                                                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL  |                                | Falling 314                                                                                      |  |
| 5. NAME OF DRILLER                                      |             | Tommy Scott                                                                                          |                                                                                                      | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKE |                                | DISTURBED: 5 UNDISTURBED: 1                                                                      |  |
| 6. DIRECTION OF HOLE                                    |             | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                      | 14. TOTAL NUMBER CORE BOXES              |                                | 1                                                                                                |  |
| 7. THICKNESS OF OVERBURDEN                              |             | 20.6'                                                                                                |                                                                                                      | 15. ELEVATION GROUND WATER               |                                | N/A                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK                              |             | 0.0'                                                                                                 |                                                                                                      | 16. DATE HOLE                            |                                | STARTED: 9 Nov 1983 COMPLETED: 10 Nov 1983                                                       |  |
| 9. TOTAL DEPTH OF HOLE                                  |             | 48.8'                                                                                                |                                                                                                      | 17. ELEVATION TOP OF HOLE                |                                | 0.0' MHW                                                                                         |  |
|                                                         |             |                                                                                                      |                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING       |                                | 28.3'                                                                                            |  |
|                                                         |             |                                                                                                      |                                                                                                      | 19. SIGNATURE OF INSPECTOR               |                                | Thaddeus J. Zielonka, Jr., Geologist                                                             |  |
| ELEVATION<br>0.0'                                       | DEPTH<br>0' | LEGEND<br>c                                                                                          | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                    | % CORE<br>RECOVERY<br>e                  | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>f           |  |
|                                                         |             |                                                                                                      | River water 0.0' to 28.2'                                                                            |                                          |                                | NOTE: Scale change<br>at 25.0'                                                                   |  |
| -28.2'                                                  |             |                                                                                                      | Bottom of Harbor 28.2'                                                                               |                                          |                                |                                                                                                  |  |
|                                                         | 30'         |                                                                                                      | MH-Dark grey silt                                                                                    |                                          |                                | NOTE: W/T=Weight of<br>rocks & 140 lb<br>hammer.                                                 |  |
|                                                         |             |                                                                                                      | 34.2'                                                                                                |                                          | 1                              | W/T                                                                                              |  |
| -34.2'                                                  | 34'         |                                                                                                      | SM-Dark grey fine grained<br>very silty sand.                                                        |                                          | 2                              | 20                                                                                               |  |
|                                                         |             |                                                                                                      | With organic material from<br>0.0' to 37.5'                                                          |                                          | 3                              |                                                                                                  |  |
|                                                         | 40'         |                                                                                                      | Change to fine to med.<br>grained at 37.5'                                                           |                                          | 4                              | 40                                                                                               |  |
|                                                         |             |                                                                                                      | Change to grey & w/occ.<br>gravel at 39.0'                                                           |                                          |                                | NOTE: Scale change<br>@ 40.0'                                                                    |  |
|                                                         | 42'         |                                                                                                      |                                                                                                      |                                          |                                | 12                                                                                               |  |
|                                                         |             |                                                                                                      | SM-Green-grey fine grained<br>silty sand                                                             |                                          | 5                              | Pull #1                                                                                          |  |
| -44.0'                                                  | 44'         |                                                                                                      |                                                                                                      |                                          | Box                            | From 42.8' to 45.8'                                                                              |  |
|                                                         |             |                                                                                                      | (Con't. on sht. 2)                                                                                   |                                          |                                |                                                                                                  |  |
|                                                         |             |                                                                                                      | NOTE: Soils field classi-<br>fied in accordance with<br>the Unified Soil Classifi-<br>cation System. |                                          |                                | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon<br>w/140 lb hammer (falling) |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                              | Hole No.                 |                        |                                                                                                    |
|---------------------------|-------|-----------------------|----------------------------------------------|--------------------------|------------------------|----------------------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                              | SHEET                    |                        |                                                                                                    |
| Savannah Harbor Widening  |       | Savannah District     |                                              | 2 OF 2 SHEETS            |                        |                                                                                                    |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVER<br>ERY | BOX OR<br>SAMPLE<br>NO | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)               |
| -44.0'                    | 46    | c                     | d                                            | e                        | f                      | g                                                                                                  |
|                           | 46    |                       | SM-Green-grey fine grained<br>silty sand.    | 56.7%                    | Box<br>1               | Pull #1 con't.<br>Run 3.0' Rec 1.7'<br>C.L. 1.3' U.L. 1.3'<br>100% Green-grey ret.<br>CD 45.8'     |
|                           | 48    |                       |                                              | 0%                       |                        | Pull #2<br>From 45.8' to 48.8'<br>Run 3.0' Rec 0.0'<br>C.L. 3.0' U.L. 3.0'<br>100% Green-grey ret. |
| -48.8'                    |       |                       | Bottom of Hole 48.8'                         |                          |                        | CD 48.8'                                                                                           |

Hole No. SH-99

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic |                                                                                                  | INSTALLATION<br>Savannah, GA                                                     |                              | SHEET 1<br>OF 1 SHEETS                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Spillspoon                                 |                              |                                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-823017 Y-769666                                                                    |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MSL                                |                              |                                                                                                           |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                           |                              |                                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-99                                                             |              |                            |                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN: DISTURBED: UNDISTURBED:<br>4 0 0 |                              |                                                                                                           |  |
| 5. NAME OF DRILLER<br>E. Maulden                                                                                             |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BIT RES<br>0                                               |                              |                                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>0.0 MLW                                            |                              |                                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>51.0' includes water                                                                           |              |                            |                                                                                                  | 16. DATE HOLE<br>STARTED 24 Sep 83 COMPLETED 24 Sep 83                           |                              |                                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                             |                              |                                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>51.0'                                                                                              |              |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                                      |                              |                                                                                                           |  |
|                                                                                                                              |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist <i>James E. Bolen</i>    |                              |                                                                                                           |  |
| ELEVATION<br>0.0 a                                                                                                           | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                                          | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                 |  |
|                                                                                                                              | 10           |                            | Sea Water 0.0'-37.5'                                                                             |                                                                                  |                              |                                                                                                           |  |
|                                                                                                                              | 20           |                            |                                                                                                  |                                                                                  |                              |                                                                                                           |  |
|                                                                                                                              | 30           |                            |                                                                                                  |                                                                                  |                              |                                                                                                           |  |
| -37.5                                                                                                                        | 40           |                            | Bottom of Harbor 37.5'                                                                           |                                                                                  |                              | Note: Change of scale<br>at 40.0'                                                                         |  |
| -40.5'                                                                                                                       |              |                            | MH-Black fat clayey silt<br>with minor organic<br>matter                                         |                                                                                  | 1                            | Note: Weight of tools<br>37.5'-40.5' At 42.0'<br>set casing to 42.0'. 19                                  |  |
| -42.0                                                                                                                        |              |                            | SM-Gray silty, medium,<br>fine sand (moderate<br>silt content)                                   |                                                                                  | 2                            | SAMPLE LAB 59                                                                                             |  |
|                                                                                                                              | 45           |                            | ML-Green sandy silt.                                                                             |                                                                                  | 3                            | No. Class LL PL PT 70                                                                                     |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                                                  |                              | 3 CH 66 26 40 57                                                                                          |  |
|                                                                                                                              |              |                            | Clayey silt with 20% fine<br>sand                                                                |                                                                                  |                              | 53                                                                                                        |  |
|                                                                                                                              | 50           |                            |                                                                                                  |                                                                                  |                              | 69                                                                                                        |  |
| -51.0                                                                                                                        |              |                            |                                                                                                  |                                                                                  | 4                            | 88                                                                                                        |  |
|                                                                                                                              |              |                            | Bottom of Hole: 51.0'                                                                            |                                                                                  |                              | Blows Per Foot: Number<br>required to drive a<br>1 3/8" ID splitspoon<br>w/140 lb. hammer falling<br>30". |  |
|                                                                                                                              |              |                            | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                                                                  |                              |                                                                                                           |  |

Hole No. SH-99A

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah District                                                          |                         | SHEET 1<br>OF 1 SHEETS       |                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------|-------------------------|------------------------------|---------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                            | 10. SIZE AND TYPE OF BIT<br>1 3/8" Splitspoon                                              |                         |                              |                                                                                                         |
| 2. LOCATION (Coordinates or Station)<br>X-823210 Y-769780                                                                    |              |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                          |                         |                              |                                                                                                         |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                     |                         |                              |                                                                                                         |
| 4. HOLE NO. (As shown on drawing title and file marked)<br>SH-99A                                                            |              |                            | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                  |                         | 13. DISTURBED<br>6 0         |                                                                                                         |
| 5. NAME OF DRILLER<br>Tommy Goff                                                                                             |              |                            | 14. P.C. NUMBER OF BURSTS<br>( )                                                           |                         |                              |                                                                                                         |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            | 15. ELEVATION GROUND WATER<br>N/A                                                          |                         |                              |                                                                                                         |
| 7. THICKNESS OF OVERBURDEN<br>7.4'                                                                                           |              |                            | 16. DATE HOLE<br>19 Nov 1983                                                               |                         | 16. DATE HOLE<br>9 Nov 1983  |                                                                                                         |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                                                      |                         |                              |                                                                                                         |
| 9. TOTAL DEPTH OF HOLE<br>47.0'                                                                                              |              |                            | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                  |                         |                              |                                                                                                         |
|                                                                                                                              |              |                            | 19. SIGNATURE OF INSPECTOR<br>Thaddeus J. Zielonka, Jr., Geologist                         |                         |                              |                                                                                                         |
| ELEVATION<br>ft., ft.                                                                                                        | DEPTH<br>ft. | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                          | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g               |
|                                                                                                                              |              |                            | River water 0.0' to 39.6'                                                                  |                         |                              | BLUES                                                                                                   |
|                                                                                                                              | 30           |                            |                                                                                            |                         |                              | NOTE: Scale change<br>@ 30.0'                                                                           |
|                                                                                                                              |              |                            |                                                                                            |                         |                              | SAMPLE LAB                                                                                              |
|                                                                                                                              |              |                            |                                                                                            |                         |                              | No. Class LL PL PI                                                                                      |
|                                                                                                                              |              |                            |                                                                                            |                         |                              | 3 SC-H 138 49 89                                                                                        |
|                                                                                                                              | 39.6'        |                            | Bottom of Harbor 39.6'                                                                     |                         |                              |                                                                                                         |
|                                                                                                                              | 41.1'        |                            | MH-Dark grey inorganic<br>silt. 41.1'                                                      |                         | 1                            | NOTE: W/T=Weight of<br>tools & 140 lb. 20<br>hammer.                                                    |
|                                                                                                                              | 43.0'        |                            | SM-Dark grey fine to med.<br>grained silty sand. 43.0'                                     |                         | 2                            |                                                                                                         |
|                                                                                                                              | 44.0'        |                            | MH-Dark grey inorganic silt<br>44.0'                                                       |                         | 3                            | 20                                                                                                      |
|                                                                                                                              | 45.0'        |                            | SM-Grey fine to med. grained<br>silty sand 45.0'                                           |                         | 4                            | 31                                                                                                      |
|                                                                                                                              | 46.7'        |                            | GM Tan to grey silty, sand,<br>fine & coarse gravel 46.7'                                  |                         | 5                            | 87                                                                                                      |
|                                                                                                                              | 47.0'        |                            | SM-Light grey fine silty<br>sand                                                           |                         | 6                            |                                                                                                         |
|                                                                                                                              | 50           |                            | Bottom of Hole 47.0'                                                                       |                         |                              |                                                                                                         |
|                                                                                                                              |              |                            | NOTE: Soils field classified in accordance with<br>the Unified Soil Classification System. |                         |                              | BLUES PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon<br>w/140 lb. hammer falling<br>30". |

Hole No. SH-105

| DRILLING LOG                                                                                                                 |              | DIVISION       | INSTALLATION                                                                      |                              | SHEET 1 OF 2 SHEETS          |                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|-----------------------------------------------------------------------------------|------------------------------|------------------------------|---------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              | South Atlantic | Savannah, GA                                                                      |                              |                              |                                                                                             |
| 2. LOCATION (Coordinates or Station)<br>X 830571 Y 761702                                                                    |              |                | 10. SIZE AND TYPE OF BIT<br>3/8" ID splitspoon                                    |                              |                              |                                                                                             |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                | 11. DATUM FOR ELEVATION SHOWN (TBM or BSL)<br>MLW                                 |                              |                              |                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-105                                                            |              |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                            |                              |                              |                                                                                             |
| 5. NAME OF DRILLER<br>E. Maulden                                                                                             |              |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                         |                              | 14                           | UNDISTURBED                                                                                 |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                | 14. TOTAL NUMBER CORE BOXES                                                       |                              | 0                            |                                                                                             |
| 7. THICKNESS OF OVERBURDEN<br>43.5'                                                                                          |              |                | 15. ELEVATION GROUND WATER<br>N/A                                                 |                              |                              |                                                                                             |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |              |                | 16. DATE HOLE STARTED<br>11 Oct 83                                                |                              | COMPLETED<br>13 Oct 83       |                                                                                             |
| 9. TOTAL DEPTH OF HOLE<br>50.3'                                                                                              |              |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                              |                              |                              |                                                                                             |
|                                                                                                                              |              |                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                         |                              |                              |                                                                                             |
|                                                                                                                              |              |                | 19. SIGNATURE OF INSPECTOR<br>Thaddeus J. Zielonka                                |                              |                              |                                                                                             |
| ELEVATION<br>0 0 =                                                                                                           | DEPTH<br>0 b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                 | 1 CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g   |
|                                                                                                                              |              |                | Sea Water 0.0'-6.8'                                                               |                              |                              |                                                                                             |
|                                                                                                                              | 5            |                |                                                                                   |                              |                              |                                                                                             |
| -6.8                                                                                                                         |              |                | Bottom of Harbor 6.8'                                                             |                              |                              |                                                                                             |
| -8.3                                                                                                                         |              |                | CH-Dark gray plastic clay                                                         |                              | 1                            | Note: W/T = Weight of tools and 140lb. hammer                                               |
|                                                                                                                              | 10           |                | SM-Tan-gray fine to medium grained silty sand. Occasional MH stringers            |                              | 2                            |                                                                                             |
| -11.3                                                                                                                        |              |                | MH-Dark gray silt.                                                                |                              |                              | SAMPLE LAB                                                                                  |
|                                                                                                                              | 15           |                |                                                                                   |                              | 3                            | No. Class LL PL PI W/T                                                                      |
| -15.5                                                                                                                        |              |                | SM-Gray fine medium silty sand                                                    |                              |                              | 1 MH - - -                                                                                  |
| -16.0                                                                                                                        |              |                |                                                                                   |                              |                              | 3 MH 173 73 100                                                                             |
| -17.5                                                                                                                        |              |                | MH-Dark gray silt                                                                 |                              | 4                            | 5 SP NP NP NP 9                                                                             |
|                                                                                                                              | 20           |                | SM-Gray fine to medium grained silty sand                                         |                              | 5                            | 7 SP NP NP NP                                                                               |
|                                                                                                                              | 25           |                |                                                                                   |                              |                              | 9 SP NP NP NP W/T                                                                           |
| -22.0                                                                                                                        |              |                | SP-Tan-gray fine to medium poorly graded sand                                     |                              | 6                            | 14 SM 44 26 15                                                                              |
| -23.5                                                                                                                        |              |                | SM-Gray fine grained silty sand                                                   |                              | 7                            |                                                                                             |
|                                                                                                                              | 30           |                | Grain size change fine to medium grained                                          |                              | 8                            |                                                                                             |
| -29.5                                                                                                                        |              |                | SP-(Continued)                                                                    |                              |                              |                                                                                             |
| -30.0                                                                                                                        |              |                | Continued on Sheet 2                                                              |                              |                              |                                                                                             |
|                                                                                                                              |              |                | Note: Soils classified in accordance with the Unified Soil Classification System. |                              |                              | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                     | 0.0 MLW                   |                         | Hole No. SH-105                                                                       |                        |
|---------------------------|-------|-----------------------|-------------------------------------------------------------------------------------|---------------------------|-------------------------|---------------------------------------------------------------------------------------|------------------------|
| Savannah Harbor Widening  |       |                       | INSTALLATION                                                                        |                           | Savannah, GA            |                                                                                       | SHEET 2<br>OF 2 SHEETS |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                        | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant.) |                        |
| -30.0                     | 30b   | c                     | J                                                                                   | c                         | JAR                     | g                                                                                     | Blows                  |
|                           |       |                       | SP-(Continued) Tan medium to<br>coarse poorly graded sand<br>with a trace of gravel |                           |                         |                                                                                       | 30                     |
|                           |       |                       |                                                                                     |                           | 9                       |                                                                                       | 50                     |
|                           |       |                       |                                                                                     |                           |                         |                                                                                       | 44                     |
|                           | 35    |                       |                                                                                     |                           | 10                      |                                                                                       | 72                     |
|                           |       |                       |                                                                                     |                           |                         |                                                                                       | 23                     |
|                           |       |                       | Color change to light gray.<br>Fine to medium below 37.0'                           |                           | 11                      |                                                                                       | 14                     |
|                           | 40    |                       |                                                                                     |                           |                         |                                                                                       | 68                     |
|                           |       |                       |                                                                                     |                           |                         |                                                                                       | 17                     |
|                           |       |                       | Medium to coarse with<br>occasional gravel below 41.5'                              |                           | 12                      |                                                                                       | 25                     |
| -44.5                     |       |                       |                                                                                     |                           |                         |                                                                                       | 29                     |
| -46.0                     | 45    |                       | SM-Green-gray fine to coarse<br>silty sand                                          |                           |                         |                                                                                       | 13                     |
| -47.5                     |       |                       | SP-Gray medium to coarse<br>poorly graded sand<br>with trace of gravel              |                           | 13                      |                                                                                       | 40                     |
| -50.3                     | 50    |                       | SM-Green-gray very fine silty<br>sand                                               |                           | 14                      |                                                                                       | 100/3.4                |
|                           |       |                       | Bottom of Hole: 50.3'                                                               |                           |                         |                                                                                       | 100/0.8                |

Hole No. SH-107

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                          | INSTALLATION<br>Savannah, Ga.                                      |                         | SHEET 1<br>OF 2 SHEETS                                                                                 |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|--|--|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                                          | 10. SIZE AND TYPE OF BIT 1 3/8" Splitspoon                         |                         |                                                                                                        |  |  |  |
| 2. LOCATION (Geographic Station)<br>X-828142, Y-164254                                                                       |       |                            |                                                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                  |                         |                                                                                                        |  |  |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314             |                         |                                                                                                        |  |  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-107                                                            |       |                            |                                                                                                                          | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                     |                         | DISTURBED 7<br>UNDISTURBED 0                                                                           |  |  |  |
| 5. NAME OF DRILLER<br>A. Yates                                                                                               |       |                            |                                                                                                                          | 14. TOTAL NUMBER CORE BOXES N/A                                    |                         |                                                                                                        |  |  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                          | 15. ELEVATION GROUND WATER                                         |                         |                                                                                                        |  |  |  |
| 7. THICKNESS OF OVERBURDEN 51.2'                                                                                             |       |                            |                                                                                                                          | 16. DATE HOLE STARTED 15 Oct 1983 COMPLETED 16 Oct 1983            |                         |                                                                                                        |  |  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                                          | 17. ELEVATION TOP OF HOLE 0.0' MLW                                 |                         |                                                                                                        |  |  |  |
| 9. TOTAL DEPTH OF HOLE 51.2'                                                                                                 |       |                            |                                                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING N/A %                           |                         |                                                                                                        |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          | 19. SIGNATURE OF INSPECTOR<br>Larry Benjamin <i>Larry Benjamin</i> |                         |                                                                                                        |  |  |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                             | % CORE<br>RECOVERY                                                 | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                   |  |  |  |
| 0.0'                                                                                                                         | 0'    |                            |                                                                                                                          |                                                                    |                         |                                                                                                        |  |  |  |
|                                                                                                                              |       |                            | Sea Water 0.0' to 22.7'                                                                                                  |                                                                    |                         |                                                                                                        |  |  |  |
|                                                                                                                              | 20'   |                            |                                                                                                                          |                                                                    |                         |                                                                                                        |  |  |  |
|                                                                                                                              |       |                            | Bottom of Harbor 22.7'                                                                                                   |                                                                    |                         |                                                                                                        |  |  |  |
| -22.7'                                                                                                                       |       |                            | CH-Dark green fine silty<br>fat clay 24.2'                                                                               |                                                                    | 1                       | 10                                                                                                     |  |  |  |
| -24.2'                                                                                                                       | 25'   |                            | SM-Green fine silty sand                                                                                                 |                                                                    | 2                       | 10                                                                                                     |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | NOTE: Weight of<br>hammer 140<br>lbs. 12                                                               |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | SAMPLE LAB 12                                                                                          |  |  |  |
| -30.2'                                                                                                                       | 30'   |                            | SP-Tan & green coarse<br>poorly graded sand 30.2'                                                                        |                                                                    | 3                       | No. Class LL PL PI 25                                                                                  |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | 2 SP NP NP NP 27                                                                                       |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | 4 SP NP NP NP                                                                                          |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | 6 SM 45 31 14 16                                                                                       |  |  |  |
| -34.7'                                                                                                                       | 35'   |                            | SM-Tan fine silty sand,<br>trace of coarse grain<br>sizes                                                                |                                                                    | 4                       | 16                                                                                                     |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | 17                                                                                                     |  |  |  |
|                                                                                                                              |       |                            | Green, no coarse grain sizes                                                                                             |                                                                    |                         | 37                                                                                                     |  |  |  |
| -40.7'                                                                                                                       | 40'   |                            |                                                                                                                          |                                                                    |                         | 43                                                                                                     |  |  |  |
|                                                                                                                              |       |                            | No green color                                                                                                           |                                                                    | 5                       | 39                                                                                                     |  |  |  |
|                                                                                                                              |       |                            |                                                                                                                          |                                                                    |                         | 50                                                                                                     |  |  |  |
| -45.2'                                                                                                                       | 45'   |                            | Green                                                                                                                    |                                                                    |                         | 21                                                                                                     |  |  |  |
|                                                                                                                              |       |                            | (Con't. on sht. 2)<br>NOTE: Soils field classi-<br>fied in accordance with the<br>Unified Soil Classification<br>System. |                                                                    |                         | BLOWS PER FOOT:<br>Number required to<br>drive 1 3/8" split-<br>spoon w/140 lb. hammer<br>falling 30". |  |  |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                   | Hole No. SH-107          |                         |                                                                                      |
|---------------------------|-------|-----------------------|---------------------------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                                   | SHEET                    |                         |                                                                                      |
| Savannah Harbor Widening  |       | Savannah District     |                                                   | 2 OF 2 SHEETS            |                         |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)      | % CORE<br>RECOVER<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -45.2                     | 45    | c                     | d                                                 | e                        | TABLE                   | E BLOWS                                                                              |
| -51.2'                    | 50    |                       | SM-Green fine silty sand<br>trace of river gravel |                          | 6                       | 66                                                                                   |
|                           |       |                       |                                                   |                          |                         | 53                                                                                   |
|                           |       |                       |                                                   |                          |                         | 35                                                                                   |
|                           |       |                       |                                                   |                          | 7                       | 34                                                                                   |
|                           |       |                       | Bottom of Boring 51.2'                            |                          |                         |                                                                                      |



Hole No. SH-108

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                | INSTALLATION<br>Savannah, Ga                                         |                         | SHEET<br>OF 2 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                                | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                        |                         |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-825961, Y-766310                                                                   |       |                            |                                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                    |                         |                                                                                                     |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314               |                         |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-108                                                            |       |                            |                                                                                                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                           |                         | DISTURBED<br>9                                                                                      |  |
| 5. NAME OF DRILLER<br>Earl Maulin                                                                                            |       |                            |                                                                                                                | 14. TOTAL NUMBER CORE BOXES<br>0                                     |                         | UNDISTURBED<br>0                                                                                    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                | 15. ELEVATION GROUND WATER<br>N/A                                    |                         | 16. DATE HOLE<br>STARTED<br>19 Oct 83                                                               |  |
| 7. THICKNESS OF OVERBURDEN<br>35.9                                                                                           |       |                            |                                                                                                                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                 |                         | COMPLETED<br>19 Oct 83                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |       |                            |                                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                            |                         | %                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0                                                                                               |       |                            |                                                                                                                | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka <i>Ted Zielonka</i> Blows |                         |                                                                                                     |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                   | % CORE<br>RECOVERY                                                   | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |  |
| 0.0                                                                                                                          | 0.0   |                            |                                                                                                                |                                                                      | Jaw                     |                                                                                                     |  |
|                                                                                                                              | 10    |                            | River Water 0.0'-14.1'.                                                                                        |                                                                      |                         | Note: Scale change<br>at 10.0'                                                                      |  |
|                                                                                                                              | 15    |                            | Bottom of Harbor 14.1'                                                                                         |                                                                      |                         | Note: w/t =Weight<br>of tools and<br>140 lb. hammer                                                 |  |
|                                                                                                                              | 20    |                            | CH-Dark gray plastic<br>clay.                                                                                  |                                                                      |                         | w/c                                                                                                 |  |
|                                                                                                                              | 25    |                            | 25.3'-25.5' SN stringer 25.5'                                                                                  |                                                                      |                         | SAMPLER LAB                                                                                         |  |
|                                                                                                                              |       |                            |                                                                                                                |                                                                      |                         | No. Class LL PL PI                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                                |                                                                      |                         | 2 MH 111 57 54                                                                                      |  |
|                                                                                                                              |       |                            |                                                                                                                |                                                                      |                         | 4 MH 88 44 44                                                                                       |  |
|                                                                                                                              |       |                            |                                                                                                                |                                                                      |                         | 5 SN NP NP NP                                                                                       |  |
|                                                                                                                              |       |                            |                                                                                                                |                                                                      |                         | 9 MH 56 32 24                                                                                       |  |
|                                                                                                                              | 28.0  |                            | MH-Dark gray silt.                                                                                             |                                                                      | 2                       | w/c                                                                                                 |  |
|                                                                                                                              | 29.5  |                            | SI-Gray fine to medium<br>grained silty sand 29.5                                                              |                                                                      | 1                       | 9                                                                                                   |  |
|                                                                                                                              | 30    |                            | MH- Dark gray silt with<br>some sand.                                                                          |                                                                      | 4                       | w/c                                                                                                 |  |
|                                                                                                                              | 35    |                            |                                                                                                                |                                                                      |                         | w/r                                                                                                 |  |
|                                                                                                                              |       |                            | Continued on Sheet 2<br>Note: Soils field classified<br>in accordance with the<br>Unified soil Classification. |                                                                      |                         | Blows Per Foot<br>Number required to drive<br>1 3/8" ID splitspoon w/140<br>lb. hammer falling 30". |  |

| DRILLING LOG (Cont Sheet)        |       |        | ELEVATION TOP OF HOLE 0.0' MLW                                                          |                  | Hole No. SH-108     |                                                                                |
|----------------------------------|-------|--------|-----------------------------------------------------------------------------------------|------------------|---------------------|--------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       |        | INSTALLATION Savannah District                                                          |                  | SHEET 2 OF 2 SHEETS |                                                                                |
| ELEVATION                        | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERED | BOX OR SAMPLE NO.   | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
| -35                              | 35.0  |        | ML-Continued                                                                            | 35.9             | JAR                 | Blows                                                                          |
|                                  |       |        | SM- Dark gray fine to medium grained silty sand.                                        |                  |                     | 8                                                                              |
|                                  | 40    |        | 39.5' to 41.0'-wood chips.                                                              |                  | 5                   | w/t                                                                            |
|                                  |       |        | color change to gray and less silt below 41.0'.                                         |                  |                     | 5                                                                              |
|                                  |       |        |                                                                                         |                  |                     | 7                                                                              |
|                                  | 45    |        | Fine to coarse grained below 45.5'.                                                     |                  | 6                   | 9                                                                              |
|                                  |       |        | change to dark green/gray very fine silty sand.                                         |                  | 7                   | 7                                                                              |
|                                  |       |        |                                                                                         |                  | 8                   | 19                                                                             |
|                                  |       |        |                                                                                         |                  | 9                   | 12                                                                             |
| -50.0                            | 50    |        | Bottom of Hole 50.0'                                                                    |                  |                     | 23                                                                             |
|                                  |       |        | Note: Soils field classified in accordance with the Unified Soil Classification System. |                  |                     | 58                                                                             |
|                                  |       |        |                                                                                         |                  |                     | Blows Per Foot                                                                 |
|                                  |       |        |                                                                                         |                  |                     | Number required to drive 1 3/8" ID splitspoon w/1 lb. hammer falling 30".      |

Hole No. SH-109

| DRILLING LOG                                                                                                                 |              | DIVISION       |                                                                                         | INSTALLATION                                           |                               | SHEET 1 OF 1 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              | South Atlantic |                                                                                         | Savannah District                                      |                               |                                                                                                    |  |
| 2. LOCATION (Coordinates or Station)<br>X 823917 Y-768402                                                                    |              |                |                                                                                         | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Splitspoon       |                               |                                                                                                    |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW      |                               |                                                                                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-109                                                            |              |                |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314 |                               |                                                                                                    |  |
| 5. NAME OF DRILLER<br>Earl Mauldin                                                                                           |              |                |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN             |                               | DISTURBED<br>4<br>UNDISTURBED<br>0                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                |                                                                                         | 14. TOT - NUMBER CORE BOXES<br>0                       |                               |                                                                                                    |  |
| 7. THICKNESS OF OVERBURDEN<br>11.9'                                                                                          |              |                |                                                                                         | 15. ELEVATION GROUND WATER<br>N/A                      |                               |                                                                                                    |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                |                                                                                         | 16. DATE HOLE<br>19 Oct 83                             |                               | STARTED<br>19 Oct 83<br>COMPLETED<br>19 Oct 83                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>50.5'                                                                                              |              |                |                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                   |                               |                                                                                                    |  |
|                                                                                                                              |              |                |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>0                |                               |                                                                                                    |  |
|                                                                                                                              |              |                |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka             |                               |                                                                                                    |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>(f) | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e                                | RCF OR<br>SA-4PLE<br>FOR<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g          |  |
| 0.0                                                                                                                          |              |                | River Water 0.0' to 38.6'                                                               |                                                        |                               |                                                                                                    |  |
| 30                                                                                                                           |              |                |                                                                                         |                                                        |                               | Note: Scale change at 30.0'.                                                                       |  |
| 35                                                                                                                           |              |                |                                                                                         |                                                        |                               | SAMPLE LAB                                                                                         |  |
|                                                                                                                              |              |                |                                                                                         |                                                        |                               | No. Class LL PL PI                                                                                 |  |
|                                                                                                                              |              |                |                                                                                         |                                                        |                               | 1 MI 156 60 96                                                                                     |  |
|                                                                                                                              |              |                |                                                                                         |                                                        |                               | 3 SH-H 63 32 71                                                                                    |  |
| 38.6                                                                                                                         |              |                | Bottom of Harbor 38.6'                                                                  |                                                        |                               |                                                                                                    |  |
| 40                                                                                                                           |              |                | SH- Dark gray silt with some sand.                                                      |                                                        | 1                             |                                                                                                    |  |
| 41.6                                                                                                                         |              |                | 41.6'                                                                                   |                                                        | 2                             |                                                                                                    |  |
|                                                                                                                              |              |                | SH- Green/gray fine to coarse silty sand with gravel.                                   |                                                        | 3                             |                                                                                                    |  |
| 45                                                                                                                           |              |                | Very fine silty sand with no gravel below 42.4'.                                        |                                                        |                               |                                                                                                    |  |
|                                                                                                                              |              |                | GM layer 0.2' thick at 44.0'.                                                           |                                                        | 4                             |                                                                                                    |  |
| 50                                                                                                                           |              |                |                                                                                         |                                                        |                               |                                                                                                    |  |
| 50.5'                                                                                                                        |              |                | Bottom of Hole at 50.5'                                                                 |                                                        |                               |                                                                                                    |  |
|                                                                                                                              |              |                | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                        |                               | Blows Per Foot<br>Number required to drive<br>1 3/8" ID splitspoon w/14<br>lb. hammer falling 30". |  |

Hole No. SH-110

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                   | INSTALLATION<br>Savannah District                              |                         | SHEET<br>OF 1 SHEETS                                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                   | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon                  |                         |                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-826703 Y-765650                                                                    |       |                            |                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW              |                         |                                                                                                        |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314         |                         |                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-110                                                            |       |                            |                                                                                                   | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                 |                         |                                                                                                        |  |
|                                                                                                                              |       |                            |                                                                                                   | DISTURBED                                                      |                         | UNDISTURBED                                                                                            |  |
| 5. NAME OF DRILLER<br>Earl Mauldin                                                                                           |       |                            |                                                                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                               |                         |                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                   | 15. ELEVATION GROUND WATER<br>N/A                              |                         |                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>15.0'                                                                                          |       |                            |                                                                                                   | 16. DATE HOLE<br>STARTED 20 Oct 83 COMPLETED 20 Oct 83         |                         |                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                   | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                           |                         |                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |       |                            |                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                    |                         |                                                                                                        |  |
|                                                                                                                              |       |                            |                                                                                                   | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka <i>Ted Zielonka</i> |                         |                                                                                                        |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                      | % CORE<br>RECOVERY                                             | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                   |  |
| 0.0                                                                                                                          | 0     |                            | River Water 0.0' to 35.0'                                                                         |                                                                |                         | Blows                                                                                                  |  |
|                                                                                                                              | 30    |                            |                                                                                                   |                                                                |                         | Note: Scale change<br>at 30.0'.                                                                        |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                |                         | SAMPLE LAB                                                                                             |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                |                         | No. Class LL PL PI                                                                                     |  |
| -35.0                                                                                                                        | 35    |                            | Bottom of Harbor 35.0'                                                                            |                                                                |                         | 2 SP NP NP NP                                                                                          |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                |                         | 4 SP NP NP NP                                                                                          |  |
|                                                                                                                              | 40    |                            | SM-Gray fine to medium<br>grained silty sand with<br>MH layers and occasional<br>gravel.          |                                                                | 1                       | 12                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                | 2                       | 12                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                |                         | 13                                                                                                     |  |
|                                                                                                                              | 42.5  |                            | Wood between 36.5' and 38.0'                                                                      |                                                                |                         | 32                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                |                         | 63                                                                                                     |  |
|                                                                                                                              | 45    |                            | SP-Tan fine to coarse<br>grained poorly graded<br>sand with gravel.<br>Fine to medium below 45.5' |                                                                | 3                       | 22                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                   |                                                                |                         | 48                                                                                                     |  |
| -47.0                                                                                                                        | 47.0  |                            |                                                                                                   |                                                                | 4                       | 30                                                                                                     |  |
| -48.5                                                                                                                        | 48.5  |                            | SP-SM Gray fine to medium<br>poorly graded silty sand                                             |                                                                | 5                       | 100/0.7                                                                                                |  |
| -50.0                                                                                                                        | 50    |                            | SM-Tan fine to coarse silty<br>sand with gravel.                                                  |                                                                | 6                       | 97                                                                                                     |  |
|                                                                                                                              |       |                            | Bottom of Hole 50.0                                                                               |                                                                |                         |                                                                                                        |  |
|                                                                                                                              |       |                            | Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.     |                                                                |                         | Blows Per Foot<br>Number required to drive<br>1 3/8" ID splitspoon<br>w/140 lb. hammer falling<br>30". |  |

Hole No. SH-111

| DRILLING LOG                                                            |       | DIVISION<br>South Atlantic |                                                                                                                                | INSTALLATION<br>Savannah District                      |                                | SHEET 1<br>OF 1 SHEETS                                                                      |  |
|-------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                  |       |                            |                                                                                                                                | 10. SIZE AND TYPE OF BIT 1 3/8" ID Spitspoon           |                                |                                                                                             |  |
| 2. LOCATION (Coordinates or Station)<br>X-823330 Y-769241               |       |                            |                                                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MTW      |                                |                                                                                             |  |
| 3. DRILLING AGENCY<br>Savannah District                                 |       |                            |                                                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314 |                                |                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-111       |       |                            |                                                                                                                                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN         |                                | DISTURBED<br>1                                                                              |  |
| 5. NAME OF DRILLER<br>Karl Mandlin                                      |       |                            |                                                                                                                                | 14. TOTAL NUMBER CORE BOXES<br>0                       |                                | UNDISTURBED<br>0                                                                            |  |
| 6. DIRECTION OF HOLE<br>[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                                | 15. ELEVATION GROUND WATER<br>N/A                      |                                | 16. DATE INST<br>20 Oct 84                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>14.0'                                     |       |                            |                                                                                                                                | 17. ELEVATION TOP OF HOLE<br>0.0 MTW                   |                                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                      |       |                            |                                                                                                                                | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka             |                                | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>Blows  |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                         |       |                            |                                                                                                                                |                                                        |                                |                                                                                             |  |
| ELEVATION                                                               | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                   | % CORE<br>RECOVER-<br>ERY                              | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS                                                                                     |  |
| 0.0                                                                     | 0     | c                          | d                                                                                                                              | e                                                      | f                              | g                                                                                           |  |
|                                                                         | 30    |                            | River Water 0.0' to 36.0'.                                                                                                     |                                                        |                                | Note: Scale change at 30.0'.                                                                |  |
|                                                                         | 36.0  |                            | Bottom of Harbor 36.0'                                                                                                         |                                                        |                                | SAMPLE LAB<br>No. Class LI. PL. PI<br>2 SH 47 39 14                                         |  |
|                                                                         | 40    |                            | SM-Gray fine to medium silty sand with dark gray MH layers. Color change to green/gray at 42.5'. MH layers absent below 42.5'. |                                                        | 1                              | Note: W/T = weight of tools and 140 W/T lb. Hammer.                                         |  |
|                                                                         | 45    |                            |                                                                                                                                |                                                        | 2                              |                                                                                             |  |
|                                                                         | 50.0  |                            | Change to fine grained below 48.5'.                                                                                            |                                                        | 3                              |                                                                                             |  |
|                                                                         |       |                            | Bottom of Hole at 50.0'                                                                                                        |                                                        |                                |                                                                                             |  |
|                                                                         |       |                            | Note: Soils field classified in accordance with the Unified Soil Classification System.                                        |                                                        |                                | Blows Per Foot<br>Number required to drive 1 3/8" ID spitspoon w/17 lb. hammer falling 30". |  |

| DRILLING LOG                                                                                                                 |       | DIVISION       |                                                                                        | INSTALLATION                                           |                         | Hole No. SH-112                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|----------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       | South Atlantic |                                                                                        | Savannah District                                      |                         | SHEET 1<br>OF 1 SHEETS                                                               |  |
| 2. LOCATION (Coordinates or Station)<br>X-824512, Y-767695                                                                   |       |                |                                                                                        | 10. SIZE AND TYPE OF BIT<br>3/8" ID Spitspoon          |                         |                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                |                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW      |                         |                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-112                                                            |       |                |                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314 |                         |                                                                                      |  |
| 5. NAME OF DRILLER<br>Tommy Scott                                                                                            |       |                |                                                                                        | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN         |                         | DISTURBED 8<br>UNDISTURBED 0                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                       |                         |                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>27.0'                                                                                          |       |                |                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                      |                         |                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                |                                                                                        | 16. DATE HOLE STARTED<br>31 Oct 83                     |                         | COMPLETED<br>31 Oct 83                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>48.0'                                                                                              |       |                |                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                   |                         |                                                                                      |  |
|                                                                                                                              |       |                |                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A              |                         |                                                                                      |  |
|                                                                                                                              |       |                |                                                                                        | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka             |                         |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                           | % CORE<br>RECOVERY                                     | BOX OR<br>SAMPLE<br>JAN | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| 0.0                                                                                                                          | 0     |                |                                                                                        |                                                        |                         | Blows                                                                                |  |
|                                                                                                                              |       |                | River Water 0.0' to 21.0'                                                              |                                                        |                         | Note: Scale change at 20.0'.                                                         |  |
| -21.0                                                                                                                        | 20    |                | Bottom of Harbor 21.0'                                                                 |                                                        |                         |                                                                                      |  |
|                                                                                                                              |       |                | SM-Fan fine to medium grained silty sand.                                              |                                                        | 1                       |                                                                                      |  |
|                                                                                                                              |       |                | Color change to gray at 22.2'                                                          |                                                        | 2                       | 16                                                                                   |  |
|                                                                                                                              | 25    |                | Contains organic material from 22.2' to 24.0'.                                         |                                                        |                         | 17                                                                                   |  |
|                                                                                                                              |       |                | Color change to dark gray at 28.0'.                                                    |                                                        |                         | 18                                                                                   |  |
| -28.5                                                                                                                        |       |                | 28.5'                                                                                  |                                                        |                         | 55                                                                                   |  |
|                                                                                                                              | 30    |                | No Recovery                                                                            |                                                        |                         | 36                                                                                   |  |
| -31.5                                                                                                                        |       |                | 31.5'                                                                                  |                                                        |                         | 100/0.9                                                                              |  |
| -33.0                                                                                                                        |       |                | SC-Dark gray fine to medium grained clayey sand.                                       |                                                        | 4                       | Note: 28.5' to 31.5' cuttings appear to be from gray fine to medium silty sand.      |  |
|                                                                                                                              | 35    |                | SM-Gray fine to medium grained silty sand.                                             |                                                        | 5                       | Tried new plastic spring and plastic in spoon.                                       |  |
|                                                                                                                              |       |                | Fine to coarse grained with gravel below 37.5'.                                        |                                                        |                         | 20                                                                                   |  |
| -40.5                                                                                                                        | 40    |                | 40.5'                                                                                  |                                                        | 6                       | Note: 40.5' to 43.5' cuttings appear to be from gray fine to coarse silty sand.      |  |
| -43.5                                                                                                                        |       |                | No Recovery.                                                                           |                                                        |                         | 29                                                                                   |  |
|                                                                                                                              | 45    |                | SP-Fan fine to coarse grained poorly graded sand with gravel.                          |                                                        | 7                       | SAMPLE LAB                                                                           |  |
|                                                                                                                              |       |                | Gravel absent below 46.5'.                                                             |                                                        |                         | No. Class LL PL PI                                                                   |  |
| -48.0                                                                                                                        |       |                | Bottom of boring at 48.0'                                                              |                                                        | 8                       | 32                                                                                   |  |
|                                                                                                                              |       |                | Note: Soils field classified in accordance with the Unified Soil Classification System |                                                        |                         | 2 2 4 7                                                                              |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | SP NP NP NP                                                                          |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | SM - - -                                                                             |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | SP NP NP NP                                                                          |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | 39                                                                                   |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | 40                                                                                   |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | BLOWS PER FOOT                                                                       |  |
|                                                                                                                              |       |                |                                                                                        |                                                        |                         | Number required to drive 1 3/8" ID spitspoon w/10                                    |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                                 | INSTALLATION<br>Savannah District                         |                         | Hole No. SH-113<br>SHEET 1<br>OF 1 SHEETS                                                         |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                                                 | 10. SIZE AND TYPE OF BIT 1 3/8" ID Spitspoon              |                         |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-829169, Y-763181                                                                   |       |                            |                                                                                                                                 | 11. DAYUM FOR ELEVATION SHOWN (FSN or MSL)<br>MLW         |                         |                                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314    |                         |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-113                                                            |       |                            |                                                                                                                                 | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN            |                         | DISTURBED<br>5<br>UNDISTURBED<br>0                                                                |  |
| 5. NAME OF DRILLER<br>Tommy Scott                                                                                            |       |                            |                                                                                                                                 | 14. TOTAL NUMBER CORE BOXES<br>0                          |                         | 15. ELEVATION GROUND WATER<br>N/A                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                                 | 16. DATE HOLE<br>STARTED 24 Oct 83<br>COMPLETED 24 Oct 83 |                         | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                                 |  |
| 7. THICKNESS OF OVERBURDEN 13.4                                                                                              |       |                            |                                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                         |                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0                                                                                               |       |                            |                                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka                |                         |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 50.0                                                                                                  |       |                            |                                                                                                                                 |                                                           |                         |                                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                    | 1 CORE<br>RECOVERY                                        | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)              |  |
| 0.0                                                                                                                          | 0     | c                          | d                                                                                                                               | e                                                         | f                       | g                                                                                                 |  |
|                                                                                                                              |       |                            | River Water 0.0' to 36.6'                                                                                                       |                                                           |                         | Note: Scale change at 30.0'.<br>SAMPLE LAB<br>No. Class LI. PL. P.<br>2 SI' NI' NI' NI'           |  |
|                                                                                                                              | 30    |                            |                                                                                                                                 |                                                           |                         |                                                                                                   |  |
|                                                                                                                              | 35    |                            | Bottom of Harbor 36.6'                                                                                                          |                                                           |                         |                                                                                                   |  |
| -36.6                                                                                                                        |       |                            |                                                                                                                                 |                                                           |                         |                                                                                                   |  |
|                                                                                                                              | 39.6  |                            | ML- Dark gray inorganic silt<br>39.6'                                                                                           |                                                           | 1                       | Note: W/T= Weight of<br>tools and 140 w/<br>lb. hammer.                                           |  |
| -39.6                                                                                                                        |       |                            |                                                                                                                                 |                                                           | 2                       | 7                                                                                                 |  |
| -42.5                                                                                                                        |       |                            | SM- Tan to gray fine to<br>medium grained silty sand.<br>MH layer at 42.4'. 42.5'                                               |                                                           |                         | 30                                                                                                |  |
|                                                                                                                              | 45    |                            | SP- Tan fine to medium grained<br>poorly graded sand.<br>Medium to coarse grained<br>with trace of gravel below<br>44.0'. 46.5' |                                                           | 3                       | 29                                                                                                |  |
| -46.5                                                                                                                        |       |                            |                                                                                                                                 |                                                           | 4                       | 55                                                                                                |  |
|                                                                                                                              | 50    |                            | SM- Green-gray fine silty<br>sand.                                                                                              |                                                           | 5                       | 87                                                                                                |  |
| -50.0                                                                                                                        |       |                            |                                                                                                                                 |                                                           |                         | 89                                                                                                |  |
|                                                                                                                              |       |                            | Bottom of Hole 50.0'                                                                                                            |                                                           |                         | 5                                                                                                 |  |
|                                                                                                                              |       |                            | Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                                   |                                                           |                         | BLOWS PER FOOT<br>Number required to drive<br>1 3/8" ID spitspoon w/14<br>lb. hammer falling 30". |  |

Hole No. SH-114

| DRILLING LOG                                            |       | DIVISION                                  |                                                       | INSTALLATION                               |                   | SHEET                                                                                         |  |
|---------------------------------------------------------|-------|-------------------------------------------|-------------------------------------------------------|--------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------|--|
| 1. PROJECT                                              |       | South Atlantic                            |                                                       | Savannah District                          |                   | 1 OF 1 SHEETS                                                                                 |  |
| 2. LOCATION (Coordinates or Station)                    |       | Savannah Harbor Widening                  |                                                       | 10. SIZE AND TYPE OF BIT                   |                   | 1 3/8" ID Spitspoon                                                                           |  |
| 3. DRILLING AGENCY                                      |       | Y-827680 Y-770025                         |                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or BSL) |                   | MLW                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-114                                    |                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | Falling 714                                                                                   |  |
| 5. NAME OF DRILLER                                      |       | Tommy Scott                               |                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                   | DISTURBED: 0 UNDISTURBED: 0                                                                   |  |
| 6. DIRECTION OF HOLE                                    |       | VERTICAL ( ) INCLINED ( ) DEG. FROM VERT. |                                                       | 14. TOTAL NUMBER CORE RIGS                 |                   | 11                                                                                            |  |
| 7. THICKNESS OF OVERBURDEN                              |       | 8.8'                                      |                                                       | 15. ELEVATION GROUND WATER                 |                   | N/A                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                      |                                                       | 16. DATE HOLE                              |                   | 25 Oct 81                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 50.0'                                     |                                                       | 17. ELEVATION TOP OF HOLE                  |                   | 0.0 MLW                                                                                       |  |
|                                                         |       |                                           |                                                       | 18. TOTAL CORE RECOVERY FOR BORING         |                   | N/A %                                                                                         |  |
|                                                         |       |                                           |                                                       | 19. SIGNATURE OF INSPECTOR                 |                   | Ted Zielonka                                                                                  |  |
| ELEVATION                                               | DEPTH | LEGEND                                    | CLASSIFICATION OF MATERIALS (Description)             | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                |  |
| 0.0                                                     | 0     |                                           | River Water 0.0' to 41.2'                             |                                            | JAR               |                                                                                               |  |
|                                                         |       |                                           | Bottom of Harbor 41.2'                                |                                            |                   | Note: Scale change at 40.0'.                                                                  |  |
| -41.2                                                   | 40    |                                           | MH-Dark gray silt.                                    |                                            |                   | Note: W/T= Weight of tools and 140w/r lb. hammer.                                             |  |
| -45.0                                                   | 45    |                                           | SM-Dark gray fine-medium silty sand. Organ. odor.     |                                            | 1                 | SAMPLE LAB                                                                                    |  |
| -45.7                                                   |       |                                           | 45.7'                                                 |                                            | 2                 | No. Class LL PL PI 30                                                                         |  |
| -46.7                                                   |       |                                           | MH-Dark gray-silt. 46.7'                              |                                            | 3                 | 2 SM NP NP NP 30                                                                              |  |
|                                                         |       |                                           | SH-Dark gray fine to medium grained silty sand. 49.0' |                                            | 4                 | 3 MH 131 51 80                                                                                |  |
| -49.0                                                   |       |                                           | GM-Green-gray silty sandy gravel.                     |                                            | 5                 | 4 SP NP NP NP 43                                                                              |  |
| -50.0                                                   | 50    |                                           | SM-Green-gray fine silty sand                         |                                            | 6                 | 67                                                                                            |  |
|                                                         |       |                                           | Bottom of Hole at 50.0'                               |                                            |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID spitspoon w/140 lb. hammer falling 30". |  |



Hole No. SH-115

| DRILLING LOG                                                            |            | DIVISION       |                                                                                         | INSTALLATION                                           |                                | SHEET 1 OF 1 SHEETS                                                                    |                  |
|-------------------------------------------------------------------------|------------|----------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------|------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                  |            | South Atlantic |                                                                                         | Savannah District                                      |                                |                                                                                        |                  |
| 2. LOCATION (Co ordinates or Station)<br>X-822052 Y-770810              |            |                |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon          |                                |                                                                                        |                  |
| 3. DRILLING AGENCY<br>Savannah District                                 |            |                |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL)<br>MLW      |                                |                                                                                        |                  |
| 4. HOLE NO. (As shown on drawing title) and file number:<br>SH-115      |            |                |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 114 |                                |                                                                                        |                  |
| 5. NAME OF DRILLER<br>Tommy Scott                                       |            |                |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN             |                                | DISTURBED<br>0                                                                         | UNDISTURBED<br>0 |
| 6. DIRECTION OF HOLE<br>(X) VERTICAL ( ) INCLINED _____ DEG. FROM VERT. |            |                |                                                                                         | 14. T. 1 NUMBER CORE BOXES<br>0                        |                                |                                                                                        |                  |
| 7. THICKNESS OF OVERBURDEN<br>15.3                                      |            |                |                                                                                         | 15. ELEVATION GROUND WATER<br>N/A                      |                                |                                                                                        |                  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                       |            |                |                                                                                         | 16. DATE HOLE<br>25 Oct 81                             |                                | STARTED<br>25 Oct 81                                                                   |                  |
| 9. TOTAL DEPTH OF HOLE<br>50.0                                          |            |                |                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                   |                                |                                                                                        |                  |
|                                                                         |            |                |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A              |                                | 5                                                                                      |                  |
|                                                                         |            |                |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka             |                                |                                                                                        |                  |
| ELEVATION<br>0.0                                                        | DEPTH<br>0 | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | 1 CORE<br>RECOVERY<br>e                                | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |                  |
|                                                                         |            |                | River Water 0.0' to 34.7'                                                               |                                                        |                                | Note: Scale change at 30.0'                                                            |                  |
|                                                                         | 30         |                |                                                                                         |                                                        |                                | SAMPLE LAB                                                                             |                  |
|                                                                         |            |                | Bottom of Harbor 34.7'                                                                  |                                                        |                                | No. Class LL PL PT                                                                     |                  |
|                                                                         |            |                |                                                                                         |                                                        |                                | 1 SP NP NP NP                                                                          |                  |
|                                                                         |            |                |                                                                                         |                                                        |                                | 3 SM 48 34 14                                                                          |                  |
|                                                                         | 36.7       |                |                                                                                         |                                                        |                                |                                                                                        |                  |
|                                                                         |            |                | Core Recovery 36.7'                                                                     |                                                        |                                |                                                                                        |                  |
|                                                                         | 40         |                | SH-Ten fine to medium grained silty sand.                                               | 1                                                      |                                | Note: M/T- Weight of 29                                                                |                  |
|                                                                         |            |                | Change to gray fine to coarse silty sand with gravel.                                   | 2                                                      |                                | tools and 140 lb. hammer.                                                              |                  |
|                                                                         |            |                | Change to green-gray fine grained silty sand.                                           | 3                                                      |                                | 15                                                                                     |                  |
|                                                                         | 45         |                |                                                                                         |                                                        |                                | 50                                                                                     |                  |
|                                                                         |            |                | With gravel below 45.5'                                                                 | 4                                                      |                                | 50                                                                                     |                  |
|                                                                         |            |                | Gravel decreasing below 47.0'                                                           |                                                        |                                | 53                                                                                     |                  |
|                                                                         |            |                | With occasional gravel below 48.5'                                                      |                                                        |                                | 57                                                                                     |                  |
|                                                                         | 50.0       |                | Bottom of Hole at 50.0'                                                                 |                                                        |                                | 60                                                                                     |                  |
|                                                                         |            |                | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                        |                                | 80                                                                                     |                  |
|                                                                         |            |                |                                                                                         |                                                        |                                | BLOWS PER FOOT                                                                         |                  |
|                                                                         |            |                |                                                                                         |                                                        |                                | Number required to drive 1 3/8" ID splitspoon w/14 lb. hammer falling 30".             |                  |

Hole No. SH-116

| DRILLING LOG                                                                                                                 |            | DIVISION       |                                                                                                                       | INSTALLATION                                                   |                                | SHEET                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|--|
|                                                                                                                              |            | South Atlantic |                                                                                                                       | Savannah District                                              |                                | 1 OF 2 SHEETS                                                                                     |  |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |                |                                                                                                                       | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon                  |                                |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-819439 Y-774920                                                                    |            |                |                                                                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>VLL              |                                |                                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                |                                                                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314         |                                |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-116                                                            |            |                |                                                                                                                       | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                 |                                | DISTURBED<br>11                                                                                   |  |
| 5. NAME OF DRILLER<br>Tommy Scott                                                                                            |            |                |                                                                                                                       | 14. TOTAL NUMBER CORE BOXES<br>0                               |                                | UNDISTURBED<br>0                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                |                                                                                                                       | 15. ELEVATION GROUND WATER<br>N/A                              |                                | 16. DATE HOLE<br>STARTED 27 Oct 83 COMPLETED 27 Oct 83                                            |  |
| 7. THICKNESS OF OVERBURDEN<br>38.5                                                                                           |            |                |                                                                                                                       | 17. ELEVATION TOP OF HOLE 0.0 MLW                              |                                |                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |            |                |                                                                                                                       | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                    |                                |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>50.5                                                                                               |            |                |                                                                                                                       | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka <i>Ted Zielonka</i> |                                |                                                                                                   |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>C    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                     | % CORE<br>RECOVERY<br>e                                        | BOX OR<br>SAMPLE<br>NO.<br>JAK | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         |  |
|                                                                                                                              |            |                | River Water 0.0' to 12.0'                                                                                             |                                                                |                                | SAMPLE LAB                                                                                        |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | No. Class LL PL PI                                                                                |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | 2 MH 115 54 61                                                                                    |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | 3 SM 48 34 14                                                                                     |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | 4 SP NP NP NP                                                                                     |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | 6 SP NP NP NP                                                                                     |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | 7 SP NP NP NP                                                                                     |  |
|                                                                                                                              |            |                |                                                                                                                       |                                                                |                                | 9 MH 76 49 27                                                                                     |  |
| -12.0                                                                                                                        |            |                | Bottom of Harbor 12.0'                                                                                                |                                                                |                                |                                                                                                   |  |
| -16.0                                                                                                                        |            |                | No Recovery. 16.0'                                                                                                    |                                                                |                                | Note: W/T=Weight of<br>tools and 140<br>lb. hammer.<br>Traces of MH<br>material on<br>rod.        |  |
| -17.7                                                                                                                        |            |                | SM-Tan-gray fine to medium<br>grained silty sand. 17.7'                                                               |                                                                | 1                              |                                                                                                   |  |
| -18.7                                                                                                                        |            |                | MH- Dark gray silt. 18.7'                                                                                             |                                                                | 2                              |                                                                                                   |  |
| -19.4                                                                                                                        |            |                | SM- Gray fine-medium silty<br>sand. 19.4'                                                                             |                                                                |                                |                                                                                                   |  |
| -22.0                                                                                                                        |            |                | SP-Gray fine to medium<br>poorly graded sand. 22.0                                                                    |                                                                | 3                              |                                                                                                   |  |
| -23.5                                                                                                                        |            |                | No Recovery. 23.5                                                                                                     |                                                                |                                |                                                                                                   |  |
|                                                                                                                              |            |                | SN-Gray fine to medium<br>grained silty sand with<br>a trace of gravel                                                |                                                                | 4                              |                                                                                                   |  |
|                                                                                                                              |            |                | Fine to coarse grained with<br>gravel 25.8' to 26.5'                                                                  |                                                                | 5                              |                                                                                                   |  |
|                                                                                                                              |            |                | Fine to medium grained with<br>a trace of gravel from<br>26.5' to 31.0'.                                              |                                                                | 6                              |                                                                                                   |  |
| -30.0                                                                                                                        |            |                | Continued on sheet 2<br>Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                                                                |                                | BLOWS PER FOOT<br>Number required to drive<br>1 3/8" ID splitspoon w/1<br>lb. hammer falling 30". |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TO TOP OF HOLE |                                                                                               | Hole No.           |                         | SHEET                                                                                              |  |
|---------------------------|-------|--------------------------|-----------------------------------------------------------------------------------------------|--------------------|-------------------------|----------------------------------------------------------------------------------------------------|--|
| PROJECT                   |       | INSTALLATION             |                                                                                               | DISTRICT           |                         | OF 2 SHEETS                                                                                        |  |
| Savannah Harbor Widening  |       | Savannah                 |                                                                                               | District           |                         |                                                                                                    |  |
| ELEVATION                 | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)               |  |
| -30.40                    | 30 ft | c                        | SM- Continued                                                                                 | 31.0'              | 1AR                     | BLOWS                                                                                              |  |
| -31.0                     |       |                          | No Recovery.                                                                                  | 32.                |                         | 8                                                                                                  |  |
| -32.5                     |       |                          | SP-Gray fine to medium<br>grained poorly graded<br>sand.                                      | 34.0'              | 7                       | 31                                                                                                 |  |
| -34.0                     |       |                          | SM-Gray fine to coarse silty<br>sand with gravel.                                             | 35.5'              | 8                       | 10                                                                                                 |  |
| -35.5                     | 35    |                          | No Recovery.                                                                                  | 38.5'              |                         | 33                                                                                                 |  |
| -38.5                     |       |                          | SM-Green-gray fine silty<br>sand.                                                             |                    | 9                       | 17                                                                                                 |  |
|                           | 40    |                          |                                                                                               |                    |                         | 25                                                                                                 |  |
|                           | 45    |                          |                                                                                               |                    | 10                      | 38                                                                                                 |  |
|                           | 50    |                          |                                                                                               |                    |                         | 75                                                                                                 |  |
| -50.5                     |       |                          | Bottom of hole at 50.5'                                                                       |                    |                         | Note: Cutting<br>appear to be<br>from fine to<br>coarse<br>grained SM.                             |  |
|                           |       |                          | Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                    |                         | BLOWS PER FOOT<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>1 lb. hammer falling 30". |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                          | INSTALLATION<br>Savannah District                                                       |                   | Hole No. SH-117<br>SHEET 1 OF 1 SHEETS                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                          | 10. SIZE AND TYPE OF BIT: 1/2" ID Spitspoon                                             |                   |                                                                                                             |  |
| 2. LOCATION (Coordinates or Station)<br>Y-827783, Y-764939                                                                   |       |                            |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or NSL)<br>MLW                                       |                   |                                                                                                             |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                  |                   |                                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-117                                                            |       |                            |                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                               |                   | DISTURBED<br>1                                                                                              |  |
| 5. NAME OF DRILLER<br>Tommy Scott                                                                                            |       |                            |                                                                                          | 14. TOTAL NUMBER CORE BOXES<br>0                                                        |                   | UNDISTURBED<br>0                                                                                            |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                          | 15. ELEVATION GROUND WATER<br>N/A                                                       |                   | 16. DATE HOLE<br>STARTED: 28 Oct 83 COMPLETED: 28 Oct 83                                                    |  |
| 7. THICKNESS OF OVERBURDEN<br>17.6                                                                                           |       |                            |                                                                                          | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                       |                   |                                                                                                             |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |       |                            |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                  |                   |                                                                                                             |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0                                                                                               |       |                            |                                                                                          | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka <i>Ted Zielonka</i>                          |                   |                                                                                                             |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE RECOVERY                                                                         | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                           |  |
| 0.0                                                                                                                          | 0.0   | c                          | River Water 0.0' to 32.4'                                                                |                                                                                         | 1A                | BLOWS                                                                                                       |  |
|                                                                                                                              | 30    |                            | Bottom of Harbor 32.4'                                                                   |                                                                                         |                   | Note: Scale change at 30.0'.<br><br>SAMPLE LAB<br>No. Class LL PL PI<br>2 SM NP NP NP                       |  |
| -32.4                                                                                                                        |       |                            | No Recovery. 33.4'                                                                       |                                                                                         |                   | Note: W/T=Weight of tools and 140 lb. hammer. Cuttings appear to be from fine to medium grained-silty sand. |  |
| -33.4                                                                                                                        |       |                            | SM-Tan fine to medium grained silty sand with occasional gravel.<br>CH stringer at 36.3' |                                                                                         | 1                 |                                                                                                             |  |
|                                                                                                                              | 35    |                            | Color change to gray at 37.9'                                                            |                                                                                         | 2                 |                                                                                                             |  |
| -39.5                                                                                                                        |       |                            | No Recovery.                                                                             |                                                                                         |                   |                                                                                                             |  |
|                                                                                                                              | 40    |                            |                                                                                          |                                                                                         |                   |                                                                                                             |  |
|                                                                                                                              | 45    |                            |                                                                                          |                                                                                         |                   |                                                                                                             |  |
| -45.5                                                                                                                        |       |                            | SM-Gray fine to medium grained silty sand. 47.0'                                         |                                                                                         | 3                 |                                                                                                             |  |
| -47.0                                                                                                                        |       |                            | No Recovery.                                                                             |                                                                                         |                   |                                                                                                             |  |
|                                                                                                                              | 50    |                            |                                                                                          |                                                                                         |                   |                                                                                                             |  |
| -50.0                                                                                                                        |       |                            | Bottom of Hole at 50.0'                                                                  |                                                                                         |                   |                                                                                                             |  |
| Note: Soils field classified in accordance with the Unified Soil Classification System.                                      |       |                            |                                                                                          | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID spitspoon w/1 hammer falling 30". |                   |                                                                                                             |  |



| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE<br>0.0 MLW |                                                                                               | Hole No. SH-118                                                                                      |                         |                                                                                      |
|-------------------------------------|-------|----------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       |                                  | INSTALLATION<br>Savannah District                                                             |                                                                                                      |                         |                                                                                      |
| SHEET 2<br>OF 2 SHEETS              |       |                                  |                                                                                               |                                                                                                      |                         |                                                                                      |
| ELEVATION                           | DEPTH | LEGEND                           | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVER<br>ERY                                                                             | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -40.0                               | 40.0  | c                                | d                                                                                             | c                                                                                                    | JAR                     | R BLOWS                                                                              |
| -45.0                               | 45    |                                  | SP-(continued)<br>With occasional gravel<br>below 40.5'.                                      |                                                                                                      |                         | 20                                                                                   |
|                                     |       |                                  | 45.0'                                                                                         |                                                                                                      |                         | 40                                                                                   |
|                                     |       |                                  | SM- Green-gray fine to coarse<br>silty sand with gravel.                                      | 7                                                                                                    |                         | 61                                                                                   |
|                                     |       |                                  |                                                                                               |                                                                                                      |                         | 77                                                                                   |
|                                     |       |                                  |                                                                                               |                                                                                                      |                         | 89                                                                                   |
| -51.0                               | 50    |                                  | With occasional gravel below<br>49.5'.                                                        |                                                                                                      | 8                       | 91                                                                                   |
|                                     |       |                                  | Bottom of Hole at 51.0'                                                                       |                                                                                                      |                         | 42                                                                                   |
|                                     |       |                                  | Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/140<br>lb. hammer falling 30". |                         |                                                                                      |

| DRILLING LOG                                                                                                                 |              | DIVISION<br>Savannah Atlantic |                                                                                         | INSTALLATION<br>Savannah District                      |                              | Hole No. SH-119<br>SHEET 1 OF 2 SHEETS                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                               |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon          |                              |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-820257, Y-773180                                                                   |              |                               |                                                                                         | 11. DAYUM FOR ELEVATION SHOWN (TBM or ABL)<br>MLW      |                              |                                                                                                     |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                               |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314 |                              |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-119                                                            |              |                               |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN             |                              | DISTURBED<br>9<br>UNDISTURBED<br>0                                                                  |  |
| 5. NAME OF DRILLER<br>Tommy Scott                                                                                            |              |                               |                                                                                         | 14. TOTAL NUMBER CORE BOXES<br>0                       |                              | 15. ELEVATION GROUND WATER<br>N/A                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                               |                                                                                         | 16. DATE HOLE<br>30 Oct 83                             |                              | STARTED<br>30 Oct 83<br>COMPLETED                                                                   |  |
| 7. THICKNESS OF OVERBURDEN<br>41.0                                                                                           |              |                               |                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                   |                              |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |              |                               |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A              |                              |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>51.0                                                                                               |              |                               |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>Ted Zielonka             |                              |                                                                                                     |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                   | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVER-<br>Y<br>e                           | BOX OR<br>SAMPLE<br>JUG<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>penetration, etc., if significant)<br>g<br>BLOWS |  |
|                                                                                                                              |              |                               | River Water 0.0' to 10.0'.                                                              |                                                        |                              | SAMPLE LAB<br>No. Class LL PL PI<br>3 SP NP NP NP<br>6 SP NP NP NP<br>8 1H 31 51 30                 |  |
| -10.0                                                                                                                        | 10           |                               | Bottom of Harbor 10.0'                                                                  |                                                        |                              |                                                                                                     |  |
|                                                                                                                              | 15           |                               | SM- Greenish-gray fine to medium grained silty sand with gravel.                        |                                                        | 1                            | 18                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 21                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 17                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        | 2                            | 18                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 19                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 17                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 18                                                                                                  |  |
|                                                                                                                              |              |                               | With occasional gravel below 21.0'.                                                     |                                                        | 3                            | 27                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 33                                                                                                  |  |
|                                                                                                                              |              |                               | Color change to gray.                                                                   |                                                        | 4                            | 31                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 29                                                                                                  |  |
|                                                                                                                              |              |                               |                                                                                         |                                                        |                              | 33                                                                                                  |  |
| -30.0                                                                                                                        | 30           |                               | Continued on sheet 2                                                                    |                                                        |                              | 31                                                                                                  |  |
|                                                                                                                              |              |                               | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                        |                              | BLOWS PER FOOT:<br>Number required to drive 3/8" ID splitspoon w/140 lb. hammer falling 30".        |  |

| DRILLING LOG (Cont Sheet)           |       |        | ELEVATION TOP OF HOLE<br>0.0 MLW                                                              |                        | Hole No. SH-119         |                                                                                                     |
|-------------------------------------|-------|--------|-----------------------------------------------------------------------------------------------|------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       |        | INSTALLATION<br>Savannah District                                                             |                        | SHEET 2<br>OF 2 SHEETS  |                                                                                                     |
| ELEVATION                           | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOV<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| -30.0                               | 30 b  | c      | SM-Continued                                                                                  |                        | JAR                     | BLOWS                                                                                               |
|                                     |       |        |                                                                                               |                        | 5                       | 35                                                                                                  |
|                                     |       |        |                                                                                               |                        |                         | 30                                                                                                  |
| -34.5                               | 35    |        | 34.5'                                                                                         |                        |                         | 29                                                                                                  |
|                                     |       |        | SP-Light gray fine to medium<br>grained poorly graded<br>sand.                                |                        | 6                       | 20                                                                                                  |
|                                     |       |        |                                                                                               |                        |                         | 27                                                                                                  |
|                                     | 40    |        |                                                                                               |                        |                         | 21                                                                                                  |
|                                     |       |        | Fine to coarse grained<br>below 40.5'. 43.5'                                                  |                        | 7                       | 33                                                                                                  |
| -43.5                               |       |        |                                                                                               |                        |                         | 39                                                                                                  |
|                                     |       |        |                                                                                               |                        |                         | 53                                                                                                  |
|                                     | 45    |        | SM-Green-gray fine grained<br>silty sand with<br>occasional gravel.                           |                        | 8                       | 100/0.8                                                                                             |
|                                     |       |        |                                                                                               |                        |                         | 79                                                                                                  |
|                                     |       |        |                                                                                               |                        |                         | 61                                                                                                  |
|                                     | 50    |        |                                                                                               |                        |                         | 82                                                                                                  |
| -50.0                               |       |        |                                                                                               |                        | 9                       | 91                                                                                                  |
|                                     |       |        | Bottom of Hole at 51.0'                                                                       |                        |                         |                                                                                                     |
|                                     |       |        | Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                        |                         |                                                                                                     |
|                                     |       |        |                                                                                               |                        |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/10<br>lb. hammer falling 30". |



| DRILLING LOG                                                                                                      |            | DIVISION<br>South Atlantic |                                                                                                                               | INSTALLATION<br>Savannah District                                                      |                                | Hole No. SH-120<br>SHEET<br>OF 2 SHEETS                                                   |  |
|-------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                            |            |                            |                                                                                                                               | 10. SIZE AND TYPE OF BIT 1 3/8" Split spoon                                            |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-820791 Y-772320                                                         |            |                            |                                                                                                                               | 11. DATUM FOR ELEVATION SHOWN (F.M. or M.S.L.)<br>MLW 4X5 1/2" core bbl w/ carbide bit |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                           |            |                            |                                                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 31                                  |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-120                                                 |            |                            |                                                                                                                               | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED 8 UNDISTURBED 0                 |                                |                                                                                           |  |
| 5. NAME OF DRILLER<br>Tommy Scott                                                                                 |            |                            |                                                                                                                               | 14. TO NUMBER CORE BOXES 1                                                             |                                |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                                               | 15. ELEVATION AROUND WATER N/A                                                         |                                |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 44.4'                                                                                  |            |                            |                                                                                                                               | 16. DATE HOLE<br>STARTED 2 Nov 1984 COMPLETED 7 Nov 1984                               |                                |                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                   |            |                            |                                                                                                                               | 17. ELEVATION TOP OF HOLE 0.0' MLW                                                     |                                |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE 50.5'                                                                                      |            |                            |                                                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING 72.3'                                               |                                |                                                                                           |  |
|                                                                                                                   |            |                            |                                                                                                                               | 19. SIGNATURE OF INSPECTOR<br>Thaddeus J. Zielonka, Jr., Geologist                     |                                |                                                                                           |  |
| ELEVATION<br>0.0'                                                                                                 | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                             | SCORE<br>RECOVERY<br>e                                                                 | BOX OR<br>SAMPLE<br>NO.<br>JNR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                   |            |                            | River water 0.0' to 6.1'                                                                                                      |                                                                                        |                                | SAMPLE LAB<br>No. Class LL PL PI                                                          |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 2 SP NP NP NP                                                                             |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 5 SP NP NP NP                                                                             |  |
|                                                                                                                   | 5          |                            | Bottom of Harbor 6.1'                                                                                                         |                                                                                        |                                |                                                                                           |  |
|                                                                                                                   |            |                            | SM-Tan fine to med. grain-<br>ed silty sand w/fine<br>gravel.                                                                 |                                                                                        | 1                              | 16                                                                                        |  |
|                                                                                                                   | 10         |                            |                                                                                                                               |                                                                                        |                                | 23                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 12                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 13                                                                                        |  |
|                                                                                                                   | 15         |                            | Change to grey fine to<br>coarse silty sand with-<br>out gravel at 12.5'.                                                     |                                                                                        |                                | 11                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | NOTE: W/T= Weight of<br>tools and 140 lb.<br>hammer. w/t                                  |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        | 2                              | 3                                                                                         |  |
|                                                                                                                   | 20         |                            |                                                                                                                               |                                                                                        |                                | 28                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 10                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 15                                                                                        |  |
|                                                                                                                   | 25         |                            | With fine gravel again<br>below 22.5'                                                                                         |                                                                                        |                                | 35                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 31                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 33                                                                                        |  |
|                                                                                                                   |            |                            |                                                                                                                               |                                                                                        |                                | 31                                                                                        |  |
|                                                                                                                   | 30         |                            | Without gravel below 28.5'                                                                                                    |                                                                                        | 4                              | 17                                                                                        |  |
|                                                                                                                   |            |                            | SP Con't. 29.5'                                                                                                               |                                                                                        |                                |                                                                                           |  |
|                                                                                                                   |            |                            | (Con't. on sht. 2)<br>NOTE: Soils field classifi-<br>cation in accordance with the<br>Unified Soil Classifica-<br>tion System |                                                                                        |                                | BLOWS PER FOOT:<br>Number required to<br>drive 1 3/8" ID split-<br>spoon w/140 lb. hammer |  |

| DRILLING LOG (Cont Sheet)           |              | ELEVATION TOP OF HOLE |                                                                                                                                                                              | 0.0' MLW           |                                                                                                                                           | Hole No. SH-120                                                                                                |    |                                                                                                   |  |
|-------------------------------------|--------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------|--|
| PROJECT<br>Savannah Harbor Widening |              |                       | INSTALLATION<br>Savannah District                                                                                                                                            |                    |                                                                                                                                           | SHEET 2<br>OF 2 SHEETS                                                                                         |    |                                                                                                   |  |
| ELEVATION                           | DEPTH        | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                                 | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR                                                                                                            | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                           |    |                                                                                                   |  |
| -39.0'                              | 39           |                       | a                                                                                                                                                                            | e                  |                                                                                                                                           | g BLOWS                                                                                                        |    |                                                                                                   |  |
| -34.3                               | 35           |                       | (SP - Con't.) Tan Med. to<br>coarse poorly graded sand<br>w/gravel.<br><br>Change to light grey fine<br>to med. grained without<br>gravel at 31.0'. 34.5'<br><br>No Recovery |                    | 5                                                                                                                                         | NOTE: Depth change<br>at 40.0'                                                                                 | 36 |                                                                                                   |  |
|                                     |              |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                | 18 |                                                                                                   |  |
|                                     |              |                       |                                                                                                                                                                              |                    | 6                                                                                                                                         |                                                                                                                | 24 |                                                                                                   |  |
|                                     |              |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                | 23 |                                                                                                   |  |
|                                     |              |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                | 23 |                                                                                                   |  |
| -39.3                               |              |                       | 39.3'                                                                                                                                                                        |                    |                                                                                                                                           |                                                                                                                |    |                                                                                                   |  |
| -50.5                               | 40           |                       | SM-Green-grey fine silty<br>sand.                                                                                                                                            | REC<br>83.9%       |                                                                                                                                           | Pull #1<br>From 39.3' to 42.2'<br>Run 3.1' Rec 2.6'<br>C.L. 0.5' U.L. 2.2'<br>100% Green-grey ret.<br>CD 42.4' |    |                                                                                                   |  |
|                                     | 7            |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                |    |                                                                                                   |  |
|                                     | REC<br>24.1% |                       |                                                                                                                                                                              | 8                  | Pull #2<br>From 42.4' to 45.3'<br>Run 2.9' Rec 0.7'<br>C.L. 2.2' U.L. 2.2'<br>100% Green-grey ret.<br>Hole blocked<br>No tape depth 45.3' |                                                                                                                |    |                                                                                                   |  |
|                                     |              |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                |    |                                                                                                   |  |
|                                     | REC<br>92.3% |                       |                                                                                                                                                                              |                    | Pull #3<br>From 43.5' to 50.5'<br>Run 5.2' Rec 4.8'<br>C.L. 0.4' U.L. 0.4'<br>100% Green-grey ret.                                        |                                                                                                                |    |                                                                                                   |  |
|                                     |              |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                |    |                                                                                                   |  |
|                                     | 50           |                       |                                                                                                                                                                              |                    | Bottom of Hole 50.5'                                                                                                                      |                                                                                                                |    | CD 50.5'                                                                                          |  |
|                                     |              |                       |                                                                                                                                                                              |                    |                                                                                                                                           |                                                                                                                |    | NOTE: Two sections of<br>core waxed for<br>lab.<br>Sample #1 47.7'-48.5'<br>Sample #2 48.9'-50.1' |  |

Hole No. SH-121

| DRILLING LOG                                                                   |       | DIVISION                   |                                                                                         | INSTALLATION                            |                   | SHEET                                                                                          |  |
|--------------------------------------------------------------------------------|-------|----------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------|-------------------|------------------------------------------------------------------------------------------------|--|
| 1. PROJECT                                                                     |       | South Atlantic             |                                                                                         | Savannah District                       |                   | OF 2 SHEETS                                                                                    |  |
| 2. LOCATION (Coordinates or Station)                                           |       | 3. DRILLING AGENCY         |                                                                                         | 10. SIZE AND TYPE OF BIT                |                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)                                                     |  |
| Y-821360, Y-771355                                                             |       | Savannah District          |                                                                                         | 3/8" ID Splitspoon                      |                   | MLW                                                                                            |  |
| 4. HOLE NO. (As shown on drawing title and title block)                        |       | 5. TYPE OF DRILLER         |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL |                   | 13. TOTAL NO. OF OVER- BURDEN SAMPLES TAKEN                                                    |  |
| SH-121                                                                         |       | Jummy, Scott               |                                                                                         | Falling 314                             |                   | UNOBTAINED                                                                                     |  |
| 6. DIRECTION OF HOLE                                                           |       | 7. THICKNESS OF OVERBURDEN |                                                                                         | 14. TOTAL NUMBER CORE BOXES             |                   | 15. ELEVATION GROUND WATER                                                                     |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |       | 34.0                       |                                                                                         | 1                                       |                   | N/A                                                                                            |  |
| 8. DEPTH DRILLED INTO ROCK                                                     |       | 9. TOTAL DEPTH OF HOLE     |                                                                                         | 16. DATE HOLE                           |                   | 17. ELEVATION TOP OF HOLE                                                                      |  |
| 0.0                                                                            |       | 50.0                       |                                                                                         | 8 Nov 83                                |                   | 0.0 MLW                                                                                        |  |
| 18. SIGNATURE OF INSPECTOR                                                     |       | 19. SIGNATURE OF INSPECTOR |                                                                                         | 20. DATE HOLE COMPLETED                 |                   | 21. ELEVATION TOP OF HOLE                                                                      |  |
| Ted Zelenka                                                                    |       | Ted Zelenka                |                                                                                         | 8 Nov 83                                |                   | 0.0 MLW                                                                                        |  |
| ELEVATION                                                                      | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                 |  |
| 0.0                                                                            | 0.0   |                            | River Water 0.0' to 16.0'.                                                              |                                         | JAR               | Note: Scale change at 15.0'.                                                                   |  |
| -16.0                                                                          | 15    |                            | Bottom of Harbor 16.0'.                                                                 |                                         |                   | Note: W/T=Weight of tools and 140 lb. hammer.                                                  |  |
|                                                                                | 20    |                            | SM-Tan fine to medium grained silty sand with occasional gravel.                        |                                         | 1                 | SAMPLE LAB                                                                                     |  |
|                                                                                | 25    |                            | Gray with wood chips and no gravel below 20.0'.                                         |                                         | 2                 | No. Class. LL PL PI                                                                            |  |
|                                                                                | 30    |                            | No wood chips below 23.0'.                                                              |                                         | 3                 | 2 SP NP NP NP                                                                                  |  |
|                                                                                | 35    |                            | Fine to coarse below 29.0'.                                                             |                                         | 4                 | 6 SP NP NP NP                                                                                  |  |
|                                                                                | 40    |                            | SP-Tan fine to coarse poorly graded sand with gravel.                                   |                                         | 5                 | 9 SP NP 59 72 23                                                                               |  |
|                                                                                | 45    |                            | With occasional gravel below 36.5'.                                                     |                                         |                   |                                                                                                |  |
|                                                                                | 50.0  |                            | Continued on sheet 2                                                                    |                                         |                   |                                                                                                |  |
|                                                                                |       |                            | Note: Soils field classified in accordance with the Unified Soil Classification System. |                                         |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |  |

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE<br>0.0 MLW  |                                                                                         | Hole No. SH-121         |                              |                                                                                               |
|-------------------------------------|-------|-----------------------------------|-----------------------------------------------------------------------------------------|-------------------------|------------------------------|-----------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       | INSTALLATION<br>Savannah District |                                                                                         | SHEET 2 OF 2 SHEETS     |                              |                                                                                               |
| ELEVATION                           | DEPTH | LEGEND                            | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant.)<br>g    |
| -40.0                               | 40 b  | c                                 | SP-Continued 40.5'                                                                      |                         | 1A                           | R BLOWS                                                                                       |
| -40.5                               |       |                                   | SM-Green-gray fine silty sand.                                                          |                         | 5                            | 29                                                                                            |
|                                     |       |                                   | Gray fine to coarse silty sand with fine gravel.                                        |                         | 6                            | 36                                                                                            |
|                                     | 45    |                                   | Change back to green-gray fine silty sand at 42.5'.                                     |                         | 7                            | 53                                                                                            |
|                                     |       |                                   |                                                                                         |                         |                              | 35                                                                                            |
|                                     |       |                                   |                                                                                         |                         |                              | 32                                                                                            |
|                                     |       |                                   |                                                                                         |                         |                              | 40                                                                                            |
| -50.0                               | 50    |                                   |                                                                                         |                         |                              | 41                                                                                            |
|                                     |       |                                   | Bottom of Hole at 50.0'                                                                 |                         |                              |                                                                                               |
|                                     |       |                                   | Note: Soils field classified in accordance with the Unified Soil Classification System. |                         |                              | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb hammer falling 30". |

| DRILLING LOG                                                                           |       | DIVISION                                                                                             |                                                   | INSTALLATION                                  |                   | Hole No.                                                                                              |       | SHEET         |  |
|----------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------|-------|---------------|--|
|                                                                                        |       | South Atlantic                                                                                       |                                                   | Savannah District                             |                   | SH-125                                                                                                |       | 1 OF 2 SHEETS |  |
| 1. PROJECT                                                                             |       | Savannah Harbor Widening                                                                             |                                                   | 10. SIZE AND TYPE OF BIT                      |                   | 3/8" split spoon, 5 1/2"                                                                              |       |               |  |
| 2. LOCATION (Coordinates or Station)                                                   |       | X=325616 Y=766704                                                                                    |                                                   | 11. DATUM FOR ELEVATION SHOWN (TYPED OR HAND) |                   | MLW                                                                                                   |       | fish tail     |  |
| 3. DRILLING AGENCY                                                                     |       | Savannah District                                                                                    |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL       |                   | CME-550                                                                                               |       |               |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                |       | SR-125                                                                                               |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN    |                   | DISTURBED                                                                                             |       | UNDISTURBED   |  |
| 5. NAME OF DRILLER                                                                     |       | P. Thompson                                                                                          |                                                   | 14. TOTAL NUMBER CORE BOXES                   |                   | 14                                                                                                    |       | 0             |  |
| 6. DIRECTION OF HOLE                                                                   |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                   | 15. ELEVATION GROUND WATER                    |                   |                                                                                                       |       |               |  |
| 7. THICKNESS OF OVERBURDEN                                                             |       | 61.5'                                                                                                |                                                   | 16. DATE HOLE                                 |                   | STARTED                                                                                               |       | COMPLETED     |  |
| 8. DEPTH DRILLED INTO ROCK                                                             |       | 0.0'                                                                                                 |                                                   | 17. ELEVATION TOP OF HOLE                     |                   | 5-10-84                                                                                               |       | 5-11-84       |  |
| 9. TOTAL DEPTH OF HOLE                                                                 |       | 61.5'                                                                                                |                                                   | 18. TOTAL CORE RECOVERY FOR BORING            |                   | R/A                                                                                                   |       |               |  |
|                                                                                        |       |                                                                                                      |                                                   | 19. SIGNATURE OF INSPECTOR                    |                   | Larry Benjamin                                                                                        |       |               |  |
| ELEVATION                                                                              | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)         | % CORE RECOVERY                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                        | BLOWS |               |  |
| 9.0                                                                                    | 0     |                                                                                                      | SM-Black fine silty sand w/decayed wood.          |                                               | 1                 |                                                                                                       | 10    |               |  |
|                                                                                        |       |                                                                                                      | SP-Tan coarse poorly graded sand.                 |                                               | 2                 | W.T. 5.0'                                                                                             | 10    |               |  |
|                                                                                        | 5     |                                                                                                      |                                                   |                                               |                   | Date 5-10-84                                                                                          | 7     |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               | 3                 | Depth to water during drilling.                                                                       | 8     |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               |                   |                                                                                                       | 6     |               |  |
| 1.5                                                                                    | 10    |                                                                                                      | MH-Grey fine silty fat clay w/decayed wood.       |                                               | 4                 | W.T. 5.2'                                                                                             | 4     |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               | 5                 | Water table reading 24 hrs after hole completed.                                                      | 7     |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               |                   |                                                                                                       | 4     |               |  |
| -3.0                                                                                   | 15    |                                                                                                      | SM-Grey fine to med. silty sand, trace of wood.   |                                               | 6                 |                                                                                                       | 7     |               |  |
|                                                                                        |       |                                                                                                      | Light green                                       |                                               |                   |                                                                                                       | 15    |               |  |
| -6.0                                                                                   | 20    |                                                                                                      | SP-light green med. to coarse poorly graded sand. |                                               | 6                 | At 10.5' mixed zeogel mud & continuously drove 1.5' (18") & fishtailed 1.5' (18") to a depth of 61.5' | 24    |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               |                   |                                                                                                       | 23    |               |  |
|                                                                                        | 25    |                                                                                                      |                                                   |                                               | 7                 |                                                                                                       | 25    |               |  |
|                                                                                        |       |                                                                                                      | Trace of wood                                     |                                               |                   |                                                                                                       | 20    |               |  |
|                                                                                        |       |                                                                                                      | No wood or med. grain sizes.                      |                                               |                   |                                                                                                       | 18    |               |  |
|                                                                                        |       |                                                                                                      | Grey                                              |                                               |                   |                                                                                                       | 10    |               |  |
| -10.0                                                                                  | 30    |                                                                                                      |                                                   |                                               |                   |                                                                                                       | 29    |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               |                   |                                                                                                       | 20    |               |  |
|                                                                                        |       |                                                                                                      |                                                   |                                               |                   |                                                                                                       | 25    |               |  |
| Continued on sht 2                                                                     |       |                                                                                                      |                                                   |                                               |                   |                                                                                                       |       |               |  |
| NOTE Soils field classified in accordance with the Unified Soil Classification System. |       |                                                                                                      |                                                   |                                               |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID split spoon w/ 140 lb. hammer falling 25"       |       |               |  |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE 10.5'                                                             |                 | Hole No. SH 125     |                                                                                                 |
|----------------------------------|-------|-----------------------------------------------------------------------------------------|-----------------|---------------------|-------------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       | INSTALLATION Savannah River                                                             |                 | SHEET 2 OF 2 SHEETS |                                                                                                 |
| ELEVATION                        | DEPTH | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY | BOX OR SAMPLE NO.   | REMARKS                                                                                         |
| -14.5'                           | 1h'   | d                                                                                       |                 | JAR                 |                                                                                                 |
|                                  |       | SH-Grey coarse poorly graded sand.                                                      |                 |                     |                                                                                                 |
|                                  | 35    |                                                                                         |                 | 9                   |                                                                                                 |
|                                  | 40    | Trace of fat clay.                                                                      |                 | 10                  |                                                                                                 |
|                                  |       | No clay                                                                                 |                 |                     |                                                                                                 |
|                                  |       | Trace of wood                                                                           |                 |                     |                                                                                                 |
|                                  |       | No wood                                                                                 |                 |                     |                                                                                                 |
|                                  | 45    |                                                                                         |                 | 11                  |                                                                                                 |
|                                  |       | Fine to med. grained                                                                    |                 |                     |                                                                                                 |
|                                  | 50    |                                                                                         |                 | 12                  |                                                                                                 |
|                                  |       | Fine grained                                                                            |                 |                     |                                                                                                 |
|                                  | 55    |                                                                                         |                 | 13                  |                                                                                                 |
|                                  |       | Tan                                                                                     |                 |                     |                                                                                                 |
| -49.5                            | 60    | ML-Green fine inorganic silt, calcareous. (Sandy silt)                                  |                 | 14                  |                                                                                                 |
| -51.0                            |       | Bottom of Boring 61.5'                                                                  |                 |                     |                                                                                                 |
|                                  |       | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                 |                     |                                                                                                 |
|                                  |       |                                                                                         |                 |                     | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30". |

| DRILLING LOG                                                                                                      |       | DIVISION       | INSTALLATION                                        | Hole No.                                                            | SH-126            |                                                                                |
|-------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------|---------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening.                                                                           |       | South Atlantic | Savannah River                                      | SHEET 1 OF 2 SHEETS                                                 |                   |                                                                                |
| 2. LOCATION (Coordinates or Station)<br>X-R25286 Y-767053                                                         |       |                | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon & 5 1/2" | Fishtail                                                            |                   |                                                                                |
| 3. DRILLING AGENCY<br>Savannah District                                                                           |       |                | 11. DAYUM FOR ELEVATION SHOWN (FSR or MSL)          | MLW                                                                 |                   |                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)                                                           |       | SH-126         | 12. MANUFACTURER'S DESIGNATION OF DRILL             | CME - 550                                                           |                   |                                                                                |
| 5. NAME OF DRILLER<br>P. Routhier                                                                                 |       |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN           | DISTURBED                                                           | UNDISTURBED       |                                                                                |
| 6. DIRECTION OF HOLE<br><input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. T.C. % NUMBER CORE BOXES                        | 0                                                                   |                   |                                                                                |
| 7. THICKNESS OF OVERBURDEN                                                                                        |       | 60.0'          | 15. ELEVATION GROUND WATER                          |                                                                     |                   |                                                                                |
| 8. DEPTH DRILLED INTO ROCK                                                                                        |       | 0.0'           | 16. DATE HOLE                                       | STARTED                                                             | COMPLETED         |                                                                                |
| 9. TOTAL DEPTH OF HOLE                                                                                            |       | 60.0'          | 17. ELEVATION TOP OF HOLE                           | 10.0'                                                               |                   |                                                                                |
|                                                                                                                   |       |                | 18. TOTAL CORE RECOVERY FOR BORING                  | N/A                                                                 |                   |                                                                                |
|                                                                                                                   |       |                | 19. SIGNATURE OF INSPECTOR                          | Larry Benjamin                                                      |                   |                                                                                |
| ELEVATION                                                                                                         | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)           | % CORE RECOVERY                                                     | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
| 10.0'                                                                                                             | 0'    |                |                                                     |                                                                     |                   | BLOWS                                                                          |
| 7.0                                                                                                               | 5     |                | SC-Black & brown fine clayey sand.<br>Med. grained  |                                                                     | 1                 |                                                                                |
|                                                                                                                   |       |                | MH-Green & grey fine silty fat clay.                |                                                                     | 2                 |                                                                                |
|                                                                                                                   |       |                | Grey                                                |                                                                     | 3                 | W.T. 3.0'<br>Date 5-12-84<br>Depth to water during drilling                    |
| -11.5                                                                                                             | 10    |                | PL-Light green fine sandy silt w/mica.              |                                                                     | 4                 | Water table reading 1.5 hrs. after hole completed.                             |
| -13.0                                                                                                             | 15    |                | SP-Grey coarse poorly graded sand.                  |                                                                     | 5                 |                                                                                |
|                                                                                                                   | 20    |                | Tan                                                 |                                                                     | 6                 |                                                                                |
|                                                                                                                   | 25    |                |                                                     |                                                                     | 7                 |                                                                                |
|                                                                                                                   | 30    |                |                                                     |                                                                     | 8                 |                                                                                |
|                                                                                                                   |       |                |                                                     |                                                                     | 9                 |                                                                                |
| -16.0                                                                                                             | 30    |                | Continued on sheet 2                                |                                                                     |                   |                                                                                |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                           |       |                |                                                     | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ |                   |                                                                                |

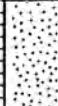
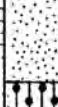
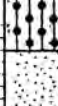
| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                         | Hole No.                  |                                |                                                                                                          |
|---------------------------|-------|-----------------------|-----------------------------------------------------------------------------------------|---------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|
| PROJECT                   |       | 10.0'                 |                                                                                         | SH-126                    |                                |                                                                                                          |
| Savannah Harbor Widening  |       | INSTALLATION          |                                                                                         | Savannah River            |                                |                                                                                                          |
|                           |       |                       |                                                                                         | SHEET 2 OF 2 SHEETS       |                                |                                                                                                          |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                     |
|                           | 30'   | c                     | d                                                                                       | e                         |                                | f<br>BLOWS                                                                                               |
|                           |       |                       | SP-Tan coarse poorly graded sand.                                                       |                           |                                | 32                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 31                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 32                                                                                                       |
|                           | 35    |                       |                                                                                         |                           | 10                             | 32                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 31                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 30                                                                                                       |
| -30.5                     | 40    |                       | MH-Grey fine silty fat clay.                                                            |                           |                                | 18                                                                                                       |
| -32.0                     |       |                       |                                                                                         | 11                        |                                | 9                                                                                                        |
|                           |       |                       | SP-Tan coarse poorly graded sand                                                        |                           | 12                             | 26                                                                                                       |
|                           | 45    |                       |                                                                                         |                           |                                | 31                                                                                                       |
|                           |       |                       |                                                                                         | 13                        |                                | 35                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 36                                                                                                       |
|                           | 50    |                       |                                                                                         | 14                        |                                | 39                                                                                                       |
|                           |       |                       | Trace of river gravel, 1/2"                                                             |                           |                                | 36                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 35                                                                                                       |
|                           |       |                       |                                                                                         |                           |                                | 32                                                                                                       |
|                           | 55    |                       |                                                                                         | 15                        |                                | 30                                                                                                       |
|                           |       |                       | No river gravel                                                                         |                           |                                | 30                                                                                                       |
| -47.0                     |       |                       | ML-Green fine inorganic silt calcareous, (sandy silt).                                  | 16                        |                                | 32                                                                                                       |
| -50.0                     | 60    |                       |                                                                                         | 17                        |                                | 68                                                                                                       |
|                           |       |                       | Bottom of Boring 60.0'                                                                  |                           |                                |                                                                                                          |
|                           |       |                       | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                           |                                |                                                                                                          |
|                           |       |                       |                                                                                         |                           |                                | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb. hammer falling<br>30". |



| DRILLING LOG                                            |       | DIVISION                                  |                                                                                        | INSTALLATION                               |                   | SHEET                                                                                               |  |
|---------------------------------------------------------|-------|-------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------|--|
| PROJECT                                                 |       | South Atlantic                            |                                                                                        | Savannah River                             |                   | OF 2 SHEETS                                                                                         |  |
| 1. PROJECT                                              |       | Savannah Harbor Widening                  |                                                                                        | 10. SIZE AND TYPE OF BIT                   |                   | 1/8" Split Spoon 2.5' ID                                                                            |  |
| 2. LOCATION (Coordinates or Station)                    |       | X-824881 7-767364                         |                                                                                        | 11. DAYUM FOR ELEVATION SHOWN (SEA or MSL) |                   | MSL                                                                                                 |  |
| 3. DRILLING AGENCY                                      |       | Savannah District                         |                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | CME-450                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-127                                    |                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                   | DISTURBED 14 UNDISTURBED 0                                                                          |  |
| 5. NAME OF DRILLER                                      |       | P. Roundtree                              |                                                                                        | 14. TO NUMBER CORE BOXES                   |                   | 0                                                                                                   |  |
| 6. DIRECTION OF HOLE                                    |       | [X] VERTICAL [ ] INCLINED DEG. FROM VERT. |                                                                                        | 15. ELEVATION GROUND WATER                 |                   |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN                              |       | 58.5'                                     |                                                                                        | 16. DATE HOLE                              |                   | STARTED 5-13-84 COMPLETED 5-14-84                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                      |                                                                                        | 17. ELEVATION TOP OF HOLE                  |                   | 8.4                                                                                                 |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 58.5'                                     |                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING         |                   | N/A %                                                                                               |  |
|                                                         |       |                                           |                                                                                        | 19. SIGNATURE OF INSPECTOR                 |                   | Larry Benjamin                                                                                      |  |
| ELEVATION                                               | DEPTH | LEGEND                                    | CLASSIFICATION OF MATERIALS (Description)                                              | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                      |  |
| 9.4                                                     | 0     |                                           | SM-Black & white fine silty sand.                                                      |                                            | 1                 |                                                                                                     |  |
|                                                         |       |                                           | Brown                                                                                  |                                            | 2                 |                                                                                                     |  |
|                                                         |       |                                           | MH-Grey fine silty fat clay w/roots.                                                   |                                            | 3                 |                                                                                                     |  |
| 5.4                                                     | 5     |                                           |                                                                                        |                                            |                   | N.T. 2.5'                                                                                           |  |
|                                                         |       |                                           |                                                                                        |                                            |                   | Date 5-13-84                                                                                        |  |
|                                                         |       |                                           |                                                                                        |                                            |                   | Depth to water weight of during drilling. hammer                                                    |  |
| 0.6                                                     | 10    |                                           | SP-Grey med. to coarse poorly graded sand.                                             |                                            | 4                 |                                                                                                     |  |
|                                                         |       |                                           | Coarse grained                                                                         |                                            |                   | N.T. 2.0'                                                                                           |  |
|                                                         |       |                                           |                                                                                        |                                            | 5                 | Water table reading 24 hrs. after hole completed.                                                   |  |
|                                                         | 15    |                                           |                                                                                        |                                            |                   |                                                                                                     |  |
|                                                         | 20    |                                           |                                                                                        |                                            | 6                 |                                                                                                     |  |
|                                                         |       |                                           |                                                                                        |                                            |                   | At 9.0' mixed zeogel mud & continuously drove 1.5'(18") & fish-tailed 1.5'(18") to a depth of 58.5' |  |
|                                                         | 25    |                                           |                                                                                        |                                            | 7                 |                                                                                                     |  |
|                                                         |       |                                           |                                                                                        |                                            |                   |                                                                                                     |  |
|                                                         | 30    |                                           |                                                                                        |                                            |                   |                                                                                                     |  |
|                                                         |       |                                           | Continued on shi 2                                                                     |                                            |                   |                                                                                                     |  |
|                                                         |       |                                           | NOTE Soils field classified in accordance with the Unified Soil Classification System. |                                            |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30".     |  |

| DRILLING LOG (Cont Sheet)           |               |                      | ELEVATION TOP OF HOLE<br>8.4'                                                                 |                         | Hole No. SH-127                |                                                                                                          |
|-------------------------------------|---------------|----------------------|-----------------------------------------------------------------------------------------------|-------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |               |                      | INSTALLATION<br>Savannah River                                                                |                         | SHEET 2<br>OF 2 SHEETS         |                                                                                                          |
| ELEVATION<br>-21.6'                 | DEPTH<br>b 30 | LEGEND<br>c          | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f                |
|                                     |               |                      | SP-Crey coarse poorly grad-<br>ed sand.                                                       |                         | 8                              |                                                                                                          |
|                                     |               |                      |                                                                                               |                         |                                | 27                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 31                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 39                                                                                                       |
|                                     | 35            |                      |                                                                                               |                         | 9                              | 26                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 24                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 23                                                                                                       |
|                                     | 40            |                      |                                                                                               |                         | 10                             | 23                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 27                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 28                                                                                                       |
|                                     | 45            |                      |                                                                                               |                         | 11                             | 27                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 29                                                                                                       |
|                                     |               |                      | Trace of coarse river<br>gravel.                                                              |                         |                                | 30                                                                                                       |
|                                     |               |                      |                                                                                               |                         |                                | 31                                                                                                       |
|                                     | 50            |                      |                                                                                               | 12                      | 26                             |                                                                                                          |
|                                     |               | Tan no river gravel. |                                                                                               |                         | 32                             |                                                                                                          |
|                                     |               |                      |                                                                                               |                         | 37                             |                                                                                                          |
|                                     |               | Trace of clay        |                                                                                               | 13                      | 34                             |                                                                                                          |
|                                     | 55            |                      |                                                                                               |                         | 30                             |                                                                                                          |
|                                     |               | No clay.             |                                                                                               |                         | 29                             |                                                                                                          |
| -50.1                               |               |                      | Bottom of Boring 58.5'                                                                        |                         |                                |                                                                                                          |
|                                     |               |                      | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                         |                                | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb. hammer falling<br>30". |

| DRILLING LOG                                                                                                                 |             | South Atlantic |                                                                                               | Savannah River                                                      |                              | SH-129                                                                                                              |  | SHEET 1<br>OF 2 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |             |                |                                                                                               | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon &                     |                              |                                                                                                                     |  |                        |  |
| 2. LOCATION (Coordinates or Station)<br>X 820545 Y-772752                                                                    |             |                |                                                                                               | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL) 1/2" fish tail           |                              |                                                                                                                     |  |                        |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                |                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME-550                  |                              |                                                                                                                     |  |                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-129                                                            |             |                |                                                                                               | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                      |                              | DISTURBED<br>18                                                                                                     |  | UNDISTURBED<br>0       |  |
| 5. NAME OF DRILLER<br>P. Rountree                                                                                            |             |                |                                                                                               | 14. TOTAL NUMBER CORE BOXES<br>4                                    |                              | 15. ELEVATION GROUND WATER                                                                                          |  |                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                |                                                                                               | 16. DATE HOLE<br>5-15-84                                            |                              | STARTED<br>5-16-84                                                                                                  |  | COMPLETED              |  |
| 7. THICKNESS OF OVERBURDEN 60.0'                                                                                             |             |                |                                                                                               | 17. ELEVATION TOP OF HOLE 10.1'                                     |                              |                                                                                                                     |  |                        |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                |                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING N/A 1                            |                              |                                                                                                                     |  |                        |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |             |                |                                                                                               | 19. SIGNATURE OF INSPECTOR<br>Larry Benjamin, <i>Larry Benjamin</i> |                              |                                                                                                                     |  |                        |  |
| ELEVATION<br>10.4'                                                                                                           | DEPTH<br>0' | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVERY<br>e                                             | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                           |  |                        |  |
|                                                                                                                              |             |                | SM-Tan fine silty sand,<br>trace of roots.                                                    |                                                                     | 1                            | BLOWS                                                                                                               |  |                        |  |
|                                                                                                                              |             |                |                                                                                               |                                                                     | 2                            | 3                                                                                                                   |  |                        |  |
| 5.6                                                                                                                          | 5           |                | MH-Grey fine silty fat<br>clay w/trace of coarse<br>grains.                                   |                                                                     | 3                            | W.T. 7.0'<br>Date 5-15-84<br>Depth to water<br>during drilling.                                                     |  |                        |  |
| 2.6                                                                                                                          |             |                | SP-Grey coarse poorly<br>graded sand.                                                         |                                                                     | 4                            | W.T. 3.0'<br>Water table reading<br>24 hrs. after<br>hole completed.                                                |  |                        |  |
|                                                                                                                              | 10          |                | Trace of decayed wood.                                                                        |                                                                     |                              | 11                                                                                                                  |  |                        |  |
|                                                                                                                              |             |                | No decayed wood.                                                                              |                                                                     |                              | 19                                                                                                                  |  |                        |  |
|                                                                                                                              | 15          |                |                                                                                               |                                                                     | 5                            | 17                                                                                                                  |  |                        |  |
| -6.4                                                                                                                         |             |                | SM light grey fine to med.<br>silty sand, trace of mica.                                      |                                                                     | 6                            | Notes:<br>The boring was<br>moved 11.0'<br>Northeast.                                                               |  |                        |  |
|                                                                                                                              | 20          |                |                                                                                               |                                                                     |                              | 11                                                                                                                  |  |                        |  |
| -10.9                                                                                                                        |             |                | MH-Grey fine silty fat clay<br>w/some sand.                                                   |                                                                     | 7                            | At 9.0' mixed<br>Zeogel mud &<br>continuously drove<br>1.5'(18") & fish-<br>tailed 1.5'(18")<br>to a depth of 60.0' |  |                        |  |
| -12.4                                                                                                                        |             |                | SM-Light grey fine to med.<br>silty sand trace of mica.                                       |                                                                     | 8                            | 12                                                                                                                  |  |                        |  |
| -15.4                                                                                                                        | 25          |                |                                                                                               |                                                                     |                              | 2                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                | SP-Light green & tan med.<br>to coarse poorly graded<br>sand.                                 |                                                                     | 9                            | 11                                                                                                                  |  |                        |  |
|                                                                                                                              |             |                |                                                                                               |                                                                     |                              | 12                                                                                                                  |  |                        |  |
|                                                                                                                              | 30          |                |                                                                                               |                                                                     |                              | 17                                                                                                                  |  |                        |  |
| -19.9                                                                                                                        |             |                |                                                                                               |                                                                     |                              | 25                                                                                                                  |  |                        |  |
|                                                                                                                              |             |                | Continued on sht 2                                                                            |                                                                     |                              | 27                                                                                                                  |  |                        |  |
|                                                                                                                              |             |                | Note: Soils field classified in<br>accordance with the Unified<br>Soil Classification System. |                                                                     |                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb. hammer falling                    |  |                        |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE                                                             |                                                                                         | Hole No.                  |                         | SH 129                                                                                         |       |
|---------------------------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------|-------------------------|------------------------------------------------------------------------------------------------|-------|
| PROJECT                   |       |                                                                                   | INSTALLATION                                                                            |                           | SHEET 2 OF 2 SHEETS     |                                                                                                |       |
| Savannah Harbor Widening  |       |                                                                                   | Savannah River                                                                          |                           |                         |                                                                                                |       |
| ELEVATION                 | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)           | BLOWS |
| -19.9'                    | 30'   | c                                                                                 | d                                                                                       | e                         | JAR                     | R                                                                                              |       |
| -24.4                     | 35    |  | SM-Light green fine silty sand, trace of mica.                                          |                           | 10                      |                                                                                                | 18    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 12    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 15    |
|                           |       |                                                                                   | SP-Light green med. to coarse poorly graded sand.                                       |                           | 11                      |                                                                                                | 21    |
|                           |       |                                                                                   | Grey, coarse grained.                                                                   |                           |                         |                                                                                                | 19    |
| -36.4                     | 40    |  |                                                                                         |                           | 12                      |                                                                                                | 18    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 23    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 27    |
|                           |       |                                                                                   | Trace of river gravel                                                                   |                           | 13                      |                                                                                                | 26    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 27    |
| -39.4                     | 45    |  |                                                                                         |                           |                         |                                                                                                | 32    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 32    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 35    |
|                           |       |                                                                                   | SM-Grey fine to med. silty sand, trace of river gravel.                                 |                           | 14                      |                                                                                                | 49    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 43    |
| -42.4                     | 50    |  |                                                                                         |                           | 15                      |                                                                                                | 39    |
|                           |       |                                                                                   | SP-Grey coarse poorly graded sand.                                                      |                           |                         |                                                                                                | 32    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 36    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 41    |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                | 52    |
| -49.9                     | 55    |  |                                                                                         |                           | 16                      |                                                                                                | 57    |
|                           |       |                                                                                   | ML-Green fine inorganic silt, calcareous. (Sandy silt)                                  |                           |                         |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           | 17                      |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                |       |
|                           | 60    |  |                                                                                         |                           | 18                      |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         |                                                                                                |       |
|                           |       |                                                                                   | Bottom of boring 60.0'                                                                  |                           |                         |                                                                                                |       |
|                           |       |                                                                                   | Note: Soils field classified in accordance with the Unified Soil Classification System. |                           |                         |                                                                                                |       |
|                           |       |                                                                                   |                                                                                         |                           |                         | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |       |

| DRILLING LOG                                                                                                                 |       | DIVISION                                                                                                          | INSTALLATION                                                              | Hole No.               | SH-130            |                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------|-------------------|-----------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       | South Atlantic                                                                                                    | Savannah, Ga.                                                             | SHEET 1<br>OF 2 SHEETS |                   |                                                                                   |
| 2. LOCATION (Coordinates or Station)<br>X=819365 Y=775500                                                                    |       | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5" fishtail                                                           |                                                                           |                        |                   |                                                                                   |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                                 |                                                                           |                        |                   |                                                                                   |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-130                                                            |       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                                            |                                                                           |                        |                   |                                                                                   |
| 5. NAME OF DRILLER<br>L. Lucas                                                                                               |       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED: 16 UNDISTURBED: 0                                         |                                                                           |                        |                   |                                                                                   |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 14. TOTAL NUMBER CORE BOXES ( )<br>15. ELATION GROUND WATER See Remarks                                           |                                                                           |                        |                   |                                                                                   |
| 7. THICKNESS OF OVERBURDEN 57.0'                                                                                             |       | 16. DATE HOLE STARTED 2 Apr 1987 COMPLETED 4 Apr 1987                                                             |                                                                           |                        |                   |                                                                                   |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       | 17. ELEVATION TOP OF HOLE 6.6'                                                                                    |                                                                           |                        |                   |                                                                                   |
| 9. TOTAL DEPTH OF HOLE 57.0'                                                                                                 |       | 18. TOTAL CORE RECOVERY FOR BORING N/A %<br>19. SIGNATURE OF INSPECTOR<br>F. Nicholson (0-30') J. Arthur (30-57') |                                                                           |                        |                   |                                                                                   |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                                                                            | CLASSIFICATION OF MATERIALS (Description)                                 | S CORE RECOVERY        | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)    |
| 6.6'                                                                                                                         | 0'    | c                                                                                                                 |                                                                           | *                      | 1                 |                                                                                   |
| 5.1'                                                                                                                         |       |                                                                                                                   | CH-Brown & greyish green fat clay, trace of fine sand, silt & roots, wet. |                        |                   |                                                                                   |
| 3.6'                                                                                                                         |       |                                                                                                                   | Greyish green.                                                            |                        | 2                 | Boring drilled in the tidal zone. No ground water level established.              |
| 2.1'                                                                                                                         |       |                                                                                                                   | MH-Greyish green fat silt, trace of mica, wet.                            |                        | 3                 | Began using Revert drilling mud at 0.0'. Grouted hole after completion of boring. |
| 0.6'                                                                                                                         |       |                                                                                                                   | SC-Greenish grey clayey fine sand, trace of fine gravel, wet.             |                        | 4                 |                                                                                   |
| -0.9'                                                                                                                        |       |                                                                                                                   | Fine to med. grained.                                                     |                        | 5                 |                                                                                   |
| -2.4'                                                                                                                        |       |                                                                                                                   | Some thick fat clay layers.                                               |                        | 6                 |                                                                                   |
| -3.9'                                                                                                                        |       |                                                                                                                   | Fine grained.                                                             |                        | 7                 |                                                                                   |
| -5.4'                                                                                                                        |       |                                                                                                                   | CH-Brown fat clay, wet.                                                   |                        | 8                 |                                                                                   |
| -8.4'                                                                                                                        |       |                                                                                                                   | SP-Tan poorly graded fine sand, trace of mica, wet.                       |                        | 9                 | Weight of hammer drove splitspoon from 10.5' to 12.0'.                            |
|                                                                                                                              |       |                                                                                                                   | Fine to med. grained, trace of silt.                                      |                        | 10                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 11                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 12                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 13                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 14                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 15                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 16                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 17                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 18                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 19                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 20                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 21                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 22                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 23                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 24                |                                                                                   |
|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 25                |                                                                                   |
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|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 236               |                                                                                   |
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|                                                                                                                              |       |                                                                                                                   |                                                                           |                        | 248               |                                                                                   |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                | 6.6' MLW            |                         | Hole No. SH-130                                                                      |         |
|---------------------------|-------|-----------------------|--------------------------------------------------------------------------------|---------------------|-------------------------|--------------------------------------------------------------------------------------|---------|
| PROJECT                   |       |                       | INSTALLATION                                                                   |                     |                         | SHEET 2 OF 2 SHEETS                                                                  |         |
| Savannah Harbor Widening  |       |                       | Savannah, Ga.                                                                  |                     |                         |                                                                                      |         |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                   | % CORE<br>RECOVERED | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS   |
| -23.4'                    | 30'   | c                     | d                                                                              | e                   | JAR                     | f                                                                                    |         |
|                           |       |                       | SP-Tan poorly graded fine to med. sand, trace of silt & mica, wet.             |                     | 10                      |                                                                                      | 44      |
|                           |       |                       |                                                                                |                     |                         |                                                                                      | 35      |
|                           |       |                       |                                                                                |                     |                         |                                                                                      | 33      |
|                           | 35    |                       |                                                                                |                     | 11                      |                                                                                      | 28      |
|                           |       |                       |                                                                                |                     |                         |                                                                                      | 34      |
| -30.9'                    |       |                       | Fine grained, no silt.                                                         |                     |                         |                                                                                      | 30      |
|                           |       |                       |                                                                                |                     |                         |                                                                                      | 25      |
| -33.9'                    | 40    |                       | Fine to med. grained, trace of coarse gravel.                                  |                     | 12                      |                                                                                      | 30      |
| -35.4'                    |       |                       |                                                                                |                     |                         |                                                                                      | 26      |
| -36.9'                    |       |                       | Med. grained, trace of clay in several thin grey layers, no gravel.            |                     | 13                      |                                                                                      | 50      |
| -38.4'                    | 45    |                       |                                                                                |                     |                         |                                                                                      | 33      |
|                           |       |                       | CL-Greyish green lean clay, some fine sand, silt & trace of mica, damp.        |                     |                         |                                                                                      | 55      |
|                           |       |                       |                                                                                |                     | 14                      |                                                                                      | 75      |
|                           |       |                       | Trace of fine sand, silt & mica, several very thin grey layers of silt & mica. |                     |                         |                                                                                      | 77      |
| -44.4'                    | 50    |                       |                                                                                |                     |                         |                                                                                      | 50      |
| -45.9'                    |       |                       | Some silt & mica, trace of fine sand.                                          |                     | 15                      |                                                                                      | 80      |
|                           |       |                       |                                                                                |                     |                         |                                                                                      | 100/0.8 |
|                           | 55    |                       | Some fine sand, trace of silt & mica, no grey layers.                          |                     | 16                      |                                                                                      | 75      |
| -50.4'                    |       |                       | Bottom of Boring 57.0'                                                         |                     |                         |                                                                                      |         |

Hole No. SH-131

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                  | INSTALLATION<br>Savannah, Ga.                                            |                                | SHEET 1<br>OF 2 SHEETS                                                                                 |       |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                  | 10. SIZE AND TYPE OF BIT 3/8" splitspoon, 6"                             |                                |                                                                                                        |       |
| 2. LOCATION (Coordinates or Station)<br>X=814740 Y=774506                                                                    |       |                            |                                                                                  | 11. DATUM FOR ELEVATION SHOWN (BM or BSL)<br>MLW spiral auger & fishtail |                                |                                                                                                        |       |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 45                        |                                |                                                                                                        |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-131                                                            |       |                            |                                                                                  | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED 21 UNDISTURBED 1  |                                |                                                                                                        |       |
| 5. NAME OF DRILLER<br>J. Butts                                                                                               |       |                            |                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                            |                                |                                                                                                        |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                  | 15. EL. 'ATION GROUND WATER See Remarks                                  |                                |                                                                                                        |       |
| 7. THICKNESS OF OVERBURDEN 70.5'                                                                                             |       |                            |                                                                                  | 16. DATE HOLE STARTED 9 Apr 1987 COMPLETED 10 Apr 1987                   |                                |                                                                                                        |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                  | 17. ELEVATION TOP OF HOLE 21.0'                                          |                                |                                                                                                        |       |
| 9. TOTAL DEPTH OF HOLE 70.5'                                                                                                 |       |                            |                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                 |                                |                                                                                                        |       |
|                                                                                                                              |       |                            |                                                                                  | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                    |                                |                                                                                                        |       |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                     | % CORE<br>RECOVERY                                                       | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                   |       |
| 21.0'                                                                                                                        | 0'    |                            |                                                                                  |                                                                          |                                |                                                                                                        | BLOWS |
| 18.0'                                                                                                                        | 5'    |                            | SM-Light brown, silty, fine to med. sand, dry.                                   |                                                                          | 1                              | Water level 13.5'                                                                                      | 6     |
| 16.5'                                                                                                                        | 10'   |                            | SC-Light brown clayey fine sand, trace of coarse gravel & mica, damp.            |                                                                          | 2                              | depth to water during drilling.                                                                        | 9     |
| 13.5'                                                                                                                        | 15'   |                            | With several thin layers of grey clay.                                           |                                                                          | 3                              | No 24 hour water level reading taken.                                                                  | 8     |
| 12.0'                                                                                                                        | 20'   |                            | Fine to med. grained, no gravel or clay layers.                                  |                                                                          |                                | Grouted hole after completion of boring.                                                               | 6     |
| 10.5'                                                                                                                        | 25'   |                            | Fine grained.                                                                    |                                                                          | 4                              | Began using Revert drilling mud at 18.0'.                                                              | 1     |
| 9.0'                                                                                                                         | 30'   |                            | Several very thin grey clay layers, trace of fine gravel.                        |                                                                          |                                | UNDISTURBED                                                                                            | 5     |
| 7.5'                                                                                                                         | 35'   |                            | Trace of fine to coarse gravel.                                                  |                                                                          |                                | Top of hole elev. 22.1' MLW. Moved rig up slope 6.0', S67°E to elev. 22.1' MLW.                        | 6     |
| 6.0'                                                                                                                         | 40'   |                            | SM-Tan & grey silty fine sand, trace of mica & clay, wet.                        |                                                                          | 5                              | Cleaned out hole to 49.0' w/ 6" fishtail & Revert mud. Pushed 5" Shelby tube 1.5' to refusal at 50.5'. | 5     |
| 4.5'                                                                                                                         | 45'   |                            | Greenish grey, trace of wood.                                                    |                                                                          | 6                              | Recovered 0.8' sample. Jar sample taken from top & bottom of tube.                                     | 3     |
| 3.0'                                                                                                                         | 50'   |                            | SC-Greyish green & brown clayey fine sand, trace of roots & mica, damp.          |                                                                          | 7                              | Attempted second Shelby tube sampling from 50.5' to 52.5' but got no recovery.                         | 2     |
| 1.5'                                                                                                                         | 55'   |                            | CH-Grey fat clay, some wood, trace of mica & fine sand, damp.                    |                                                                          | 8                              | Grouted hole.                                                                                          | 3     |
| -1.5'                                                                                                                        | 60'   |                            | OR-Dark greyish brown organic clay.                                              |                                                                          | 9                              |                                                                                                        | 26    |
| -4.5'                                                                                                                        | 65'   |                            | CH-Dark greyish brown fat clay, some wood, trace of fine sand & mica, damp.      |                                                                          | 10                             |                                                                                                        | 28    |
| -6.0'                                                                                                                        | 70'   |                            | Trace of wood.                                                                   |                                                                          |                                |                                                                                                        | 29    |
| -7.5'                                                                                                                        |       |                            | SP-Grey & tan poorly graded, fine to med. sand, trace of silt, clay & mica, wet. |                                                                          |                                |                                                                                                        |       |
| -9.0'                                                                                                                        |       |                            | Greyish tan, med. grained, no clay.                                              |                                                                          |                                |                                                                                                        |       |
|                                                                                                                              |       |                            | Trace of clay.                                                                   |                                                                          |                                |                                                                                                        |       |
|                                                                                                                              |       |                            | Continued on sheet 2                                                             |                                                                          |                                |                                                                                                        |       |
|                                                                                                                              |       |                            |                                                                                  |                                                                          |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling             |       |

| DRILLING LOG (Cont Sheet)        |       |        | ELEVATION TOP OF HOLE                                                                 |                 | 21.0' MLW           |                                                                                | Hole No. SH-131 |  |
|----------------------------------|-------|--------|---------------------------------------------------------------------------------------|-----------------|---------------------|--------------------------------------------------------------------------------|-----------------|--|
| PROJECT Savannah Harbor Widening |       |        | INSTALLATION Savannah, Ga.                                                            |                 | SHEET 2 OF 2 SHEETS |                                                                                |                 |  |
| ELEVATION                        | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                             | % CORE RECOVERY | BOX OR SAMPLE NO.   | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) | BLOWS           |  |
| -9.0'                            | 30    | c      |                                                                                       |                 |                     |                                                                                |                 |  |
| -10.5'                           |       |        | SP-Greyish tan, poorly graded, fine to med. sand, trace of clay, mica & wood, wet.    |                 | 11                  |                                                                                | 25              |  |
| -13.5'                           | 35    |        | Fine grained, no clay.                                                                |                 |                     |                                                                                | 27              |  |
|                                  |       |        | SM-Greyish tan silty fine to med. sand, trace of mica, wet.                           |                 | 12                  |                                                                                | 25              |  |
| -16.5'                           |       |        | Trace of clay & fine gravel                                                           |                 |                     |                                                                                | 23              |  |
| -18.0'                           |       |        | No clay or gravel.                                                                    |                 |                     |                                                                                | 26              |  |
| -19.5'                           | 40    |        | Trace of clay.                                                                        |                 | 13                  |                                                                                | 22              |  |
| -21.0'                           |       |        | Some grey streaks, no clay.                                                           |                 |                     |                                                                                | 28              |  |
|                                  |       |        | Fine grained.                                                                         |                 |                     |                                                                                | 28              |  |
|                                  | 45    |        | SC-Greyish green, clayey, fine sand, trace of wood & mica, wet.                       |                 | 14                  |                                                                                | 27              |  |
| -25.5'                           |       |        | CL-Greyish green, lean clay, some fine sand, silt & trace of mica, damp. See remarks. |                 | 15                  |                                                                                | 25              |  |
| -27.0'                           |       |        | SP-Light greyish tan & white, poorly graded, fine to med. sand, trace of mica, wet.   |                 | 16                  |                                                                                | 31              |  |
| -28.5'                           | 50    |        | Fine grained.                                                                         |                 | 17                  |                                                                                | 8               |  |
| -31.5'                           |       |        | Light greyish tan, fine to med. grained.                                              |                 |                     |                                                                                | 0               |  |
| -33.0'                           | 55    |        | Trace of fine gravel.                                                                 |                 | 18                  |                                                                                | 4               |  |
| -36.0'                           |       |        | CL-Dark greyish green, lean clay, some fine sand & silt, trace of mica, damp.         |                 | 19                  |                                                                                | 41              |  |
| -37.5'                           | 60    |        | Trace of fine sand & silt.                                                            |                 | 20                  |                                                                                | 54              |  |
| -39.0'                           |       |        |                                                                                       |                 |                     |                                                                                | 54              |  |
| -42.0'                           | 65    |        |                                                                                       |                 |                     |                                                                                | 59              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 71              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 84              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 43              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 37              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 35              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 30              |  |
|                                  |       |        |                                                                                       |                 |                     |                                                                                | 27              |  |
| -49.5'                           | 70    |        | Bottom of Boring @ 70.5'                                                              |                 | 21                  |                                                                                | 33              |  |



| DRILLING LOG                                                                                                                 |       | DIVISION                                                 |                                                                                           | INSTALLATION                                      |                                | THIS NO.                                                                                      |  | SHEET 1       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------|--|---------------|--|
| Savannah District                                                                                                            |       | Savannah, Ga.                                            |                                                                                           | Savannah, Ga.                                     |                                | OF 2 SHEETS                                                                                   |  |               |  |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       | 10. SIZE AND TYPE OF BIT<br>1 3/8" splitspoon, 6" spiral |                                                                                           | 11. DATUM FOR ELEVATION SHOWN (BSN or MSL)<br>MLW |                                | auger & fishtail                                                                              |  |               |  |
| 2. LOCATION (Coordinates of Station)<br>N=820165 Y=775504                                                                    |       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 550       |                                                                                           | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN    |                                | DISTURBED 22                                                                                  |  | UNDISTURBED 0 |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       | 14. TOTAL NUMBER CORE BOXES<br>0                         |                                                                                           | 15. EL - ATION GROUND WATER                       |                                | See Remarks                                                                                   |  |               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-132                                                            |       | 16. DATE HOLE                                            |                                                                                           | STARTED<br>6 Apr 1987                             |                                | COMPLETED<br>7 Apr 1987                                                                       |  |               |  |
| 5. NAME OF DRILLER<br>L. Lucas                                                                                               |       | 17. ELEVATION TOP OF HOLE<br>20.8'                       |                                                                                           | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A         |                                | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                                         |  |               |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 7. THICKNESS OF OVERBURDEN<br>70.5'                      |                                                                                           | 8. DEPTH DRILLED INTO ROCK<br>0.0'                |                                | 9. TOTAL DEPTH OF HOLE<br>70.5'                                                               |  |               |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                   | CLASSIFICATION OF MATERIALS<br>(Description)                                              | 1. CORE<br>RECOVERY<br>%                          | BOX OR<br>SAMPLE<br>NO.<br>BAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS |  |               |  |
| 20.84                                                                                                                        | 0     |                                                          |                                                                                           |                                                   |                                |                                                                                               |  |               |  |
| 19.3'                                                                                                                        | 1.5   |                                                          | SN-Light brown silty fine to med. sand, trace of fine gravel & mica, damp.                |                                                   | 1                              | Blow count obtained by use of automatic hammer.                                               |  |               |  |
| 17.8'                                                                                                                        | 3.0   |                                                          | Light brown & tan, trace of wood.                                                         |                                                   |                                | Water level 12.0' depth to water during drilling.                                             |  |               |  |
| 14.8'                                                                                                                        | 6.0   |                                                          | Trace of clay in several thin clayey layers.                                              |                                                   | 2                              | N. 24 hour water level reading taken.                                                         |  |               |  |
| 13.3'                                                                                                                        | 7.5   |                                                          | Light brown, fine grained, no wood, gravel or clay.                                       |                                                   |                                | Grouted hole after completion of boring.                                                      |  |               |  |
| 11.8'                                                                                                                        | 9.0   |                                                          | Trace of fine gravel & clay in several very thin layers.                                  |                                                   | 3                              | Began using Revert mud at 18.0'.                                                              |  |               |  |
| 10.3'                                                                                                                        | 10.5  |                                                          | Trace of fine to coarse gravel, no clay.                                                  |                                                   |                                | LAB CLASSIFICATION                                                                            |  |               |  |
| 8.8'                                                                                                                         | 12.0  |                                                          | No gravel.                                                                                |                                                   | 4                              | No. Class. LL PL PI                                                                           |  |               |  |
| 7.3'                                                                                                                         | 13.5  |                                                          | Wet.                                                                                      |                                                   |                                | 5 MH 98 59 39                                                                                 |  |               |  |
| 5.8'                                                                                                                         | 15.0  |                                                          | SC-Brown clayey fine to med. sand, trace of fine gravel & mica, wet.                      |                                                   |                                | 8 SP-SM NP NP NP                                                                              |  |               |  |
| 2.8'                                                                                                                         | 18.0  |                                                          | Grey & brown, med. grained.                                                               |                                                   | 5                              | 12 MH 165 87 78                                                                               |  |               |  |
| 1.3'                                                                                                                         | 19.5  |                                                          | CH-Brown & grey fat clay, fine sand in several thick layers, trace of roots & mica, damp. |                                                   |                                | 14 SM NP NP NP                                                                                |  |               |  |
| 0.2'                                                                                                                         | 20.0  |                                                          | Trace of sand.                                                                            |                                                   | 6                              | 17 SP-SM NP NP NP                                                                             |  |               |  |
| 0.2'                                                                                                                         | 20.2  |                                                          | Dark grey fat clay, trace of mica, damp.                                                  |                                                   | 7                              | 20 CH 107 42 65                                                                               |  |               |  |
| 0.2'                                                                                                                         | 20.4  |                                                          | Some fine sand in thick layer from 23.6' to 24.0'                                         |                                                   |                                |                                                                                               |  |               |  |
| 0.2'                                                                                                                         | 20.6  |                                                          | SM-Greyish tan silty fine sand, trace of mica & clay, wet.                                |                                                   | 8                              |                                                                                               |  |               |  |
| 0.2'                                                                                                                         | 20.8  |                                                          | Trace of wood.                                                                            |                                                   |                                | BLOWS PER FOOT:                                                                               |  |               |  |
| 0.2'                                                                                                                         | 21.0  |                                                          | No clay.                                                                                  |                                                   |                                | Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30".                  |  |               |  |
|                                                                                                                              |       |                                                          | Continued on sht 2                                                                        |                                                   |                                |                                                                                               |  |               |  |
|                                                                                                                              |       |                                                          | NOTE: Soils visually field classified in                                                  |                                                   |                                |                                                                                               |  |               |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                                                                         | 20.8' MLW                 |                         | Hole No.                                                                             |  | SH-132           |  |
|---------------------------|-------|-----------------------|---------------------------------------------------------------------------------------------------------|---------------------------|-------------------------|--------------------------------------------------------------------------------------|--|------------------|--|
| PROJECT                   |       |                       |                                                                                                         | INSTALLATION              |                         |                                                                                      |  | SHEET            |  |
| Savannah Harbor Widening  |       |                       |                                                                                                         | Savannah, Ga.             |                         |                                                                                      |  | 2<br>OF 2 SHEETS |  |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                            | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |                  |  |
| -9.2'                     | 30'   | c                     | d                                                                                                       | e                         | JAR                     | f BLOWS                                                                              |  |                  |  |
| -10.7'                    |       |                       | SM-Greyish tan silty fine sand,<br>trace of mica, wet.                                                  |                           |                         |                                                                                      |  |                  |  |
| -12.2'                    |       |                       | Grey.                                                                                                   |                           |                         |                                                                                      |  |                  |  |
| -13.7'                    | 35    |                       | Trace of wood, see remarks                                                                              |                           | 9                       | 33.0' to 34.5'-Very<br>little splitspoon<br>recovery.                                |  |                  |  |
| -16.7'                    |       |                       | SP-Greyish tan poorly graded<br>fine to med. sand, trace of<br>silt & mica, wet.                        |                           | 10                      |                                                                                      |  |                  |  |
| -18.2'                    |       |                       | SM-Grey silty fine to med.<br>sand, trace of mica, wet.                                                 |                           | 11                      |                                                                                      |  |                  |  |
| -19.7'                    | 40    |                       | CH-Dark brown & light grey<br>fat clay, some organics, damp.                                            |                           | 12                      |                                                                                      |  |                  |  |
| -21.2'                    |       |                       | Light grey fat clay, trace of<br>mica, wood & coarse gravel.                                            |                           | 13                      |                                                                                      |  |                  |  |
| -22.7'                    |       |                       | Trace of fine sand & mica,<br>no wood or gravel.                                                        |                           | 14                      |                                                                                      |  |                  |  |
| -24.2'                    | 45    |                       | SC-Grey clayey fine sand,<br>trace of silt & mica, damp.                                                |                           | 15                      |                                                                                      |  |                  |  |
| -25.7'                    |       |                       | SM-Grey silty fine sand, trace<br>of clay & mica, wet.                                                  |                           | 16                      |                                                                                      |  |                  |  |
|                           | 50    |                       | SP-Greyish tan poorly graded<br>fine sand, trace of silt &<br>mica, few thin grey silty<br>layers, wet. |                           | 17                      |                                                                                      |  |                  |  |
| -33.2'                    |       |                       | Trace of wood.                                                                                          |                           |                         |                                                                                      |  |                  |  |
|                           | 55    |                       | No wood.                                                                                                |                           |                         |                                                                                      |  |                  |  |
| -36.2'                    |       |                       | Fine to med. grained, trace<br>of fine gravel.                                                          |                           | 18                      |                                                                                      |  |                  |  |
| -37.7'                    |       |                       | Med. to coarse grained, trace<br>of clay in a very thin layer<br>of green clay.                         |                           | 19                      |                                                                                      |  |                  |  |
| -39.2'                    | 60    |                       | CL-Dark greyish green lean<br>clay, some silt & trace of<br>fine sand & mica, damp.                     |                           | 20                      |                                                                                      |  |                  |  |
| -40.7'                    |       |                       | Some fine sand & several<br>very thin grey layers of<br>silt & fine sand.                               |                           | 21                      |                                                                                      |  |                  |  |
| -45.2'                    | 65    |                       |                                                                                                         |                           | 22                      |                                                                                      |  |                  |  |
| -49.7'                    | 70    |                       | Bottom of Boring 70.5'                                                                                  |                           |                         |                                                                                      |  |                  |  |

FIELD NO. SM-133

| DRILLING LOG                                                                                                                 |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Savannah, Ga.                                            |  | SHEET<br>1 OF 2 SHEETS        |  |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|--------------------------------------------------------------------------|--|-------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |  |                            |  | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5"                           |  |                               |  |
| 2. LOCATION (Coordinates or Station)<br>X=825260 Y=767125                                                                    |  |                            |  | 11. DAYUM FOR ELEVATION SHOWN (TBM - MLW)<br>MLW spiral auger & fishtail |  |                               |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  |                            |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                   |  |                               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-133                                                            |  |                            |  | 13. TOTAL NO. OF CORE<br>BURDEN SAMPLES TAKEN                            |  | UNDISTURBED                   |  |
| 5. NAME OF DRILLER<br>T. Butts                                                                                               |  |                            |  | 14. TOTAL NUMBER OF CORE BLANKS                                          |  | 15. ELEVATION OF GROUND WATER |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                            |  | 16. DATE HOLE<br>18 Mar 1987                                             |  | COMPLETED<br>19 Mar 1987      |  |
| 7. THICKNESS OF OVERBURDEN 70.5'                                                                                             |  |                            |  | 17. ELEVATION TOP OF HOLE 20.5' MLW                                      |  |                               |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |  |                            |  | 18. TOTAL CORE RECOVERY FOR BORING N/A                                   |  |                               |  |
| 9. TOTAL DEPTH OF HOLE 70.5'                                                                                                 |  |                            |  | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                    |  |                               |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>mudding, etc., if significant) | BLOWS |
|-----------|-------|--------|--------------------------------------------------------------------------------------------------|---------------------------|--------------------------------|-----------------------------------------------------------------------------------|-------|
| 20.5'     |       |        | Asphalt 0.2'                                                                                     |                           | 1                              |                                                                                   |       |
| 20.3'     |       |        | GM-Brown & light brown to orange silty fine to coarse gravel, some fine to med. sand dry.        |                           | 2                              | Water level 14.7' depth to water during drilling.                                 | 12    |
| 19.0'     |       |        | SP-Orange poorly graded fine to med. sand, trace of silt & fine gravel, dry.                     |                           | 3                              | No 24 hour water level taken. Grouted hole after completion of boring.            | 7     |
| 17.5'     |       |        | Damp.                                                                                            |                           |                                |                                                                                   | 6     |
|           | 5     |        | Light brown to orange, med. grained.                                                             |                           |                                |                                                                                   | 12    |
| 3.0'      |       |        | Trace of wood.                                                                                   |                           |                                |                                                                                   | 7     |
| 11.5'     |       |        | Light brown, thick layer of fat clay, trace of fine gravel.                                      |                           | 4                              |                                                                                   | 17    |
| 10.0'     |       |        | CH-Brown & grey fat clay, trace of fine to med. sand, damp.                                      |                           | 5                              |                                                                                   | 10    |
| 8.5'      |       |        | Some med. to coarse sand in thick layers, trace of decayed wood.                                 |                           | 6                              |                                                                                   | 4     |
| 7.0'      |       |        | Wet.                                                                                             |                           | 7                              | Began using Revert drilling mud @ 16.5'.                                          | 3     |
| 5.8'      |       |        | SC-Brown & grey clayey, med. to coarse sand, trace of fine gravel, wet.                          |                           | 8                              |                                                                                   | 10    |
| 5.5'      |       |        | CH-Greyish brown fat clay, some silty fine sand layers, trace of roots, mica & fine gravel damp. |                           | 9                              | LAB CLASSIFICATION                                                                | 1     |
| 4.0'      |       |        | No sand, roots or gravel.                                                                        |                           |                                | No. Class LL PL PI                                                                | 2     |
| 2.5'      |       |        | Dark greenish grey, some roots & thin to thick layers of silty fine sand.                        |                           | 10                             | 7 SM-II 93 51 42                                                                  | 5     |
| 1.0'      |       |        | SM-Tannish grey silty fine to med. sand, trace of mica, wet.                                     |                           | 11                             | 8 SM-SC - - -                                                                     | 8     |
| -0.5'     |       |        | SP-Greyish tan poorly graded fine to med. sand, trace of silt & mica, wet.                       |                           | 12                             | 11 SP NP NP NP NP                                                                 | 14    |
| -2.0'     |       |        | Few grey streaks, trace of decayed wood.                                                         |                           |                                | 16 SP NP NP NP NP                                                                 | 23    |
| -3.5'     |       |        | No wood.                                                                                         |                           |                                |                                                                                   | 16    |
| -5.0'     |       |        |                                                                                                  |                           |                                |                                                                                   | 24    |
| -6.5'     |       |        |                                                                                                  |                           |                                |                                                                                   | 19    |
|           | 30    |        |                                                                                                  |                           |                                |                                                                                   | 20    |

Continued on sht 2

NOTE: Soils visually field classified

BLOWS PER FOOT:  
Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30".

| DRILLING LOG (Cont Sheet) |  |       | ELEVATION TOP OF HOLE                                                                                         |                                                                                                    | 20.5' MLW |                         | Hole No.                |                                                                                                                                                         | SH-133 |       |  |
|---------------------------|--|-------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------|-------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|--|
| PROJECT                   |  |       |                                                                                                               | INSTALLATION                                                                                       |           | Savannah, Ga.           |                         |                                                                                                                                                         |        | SHEET |  |
| Savannah Harbor Widening  |  |       |                                                                                                               |                                                                                                    |           |                         |                         |                                                                                                                                                         |        | 2     |  |
| ELEVATION                 |  | DEPTH | LEGEND                                                                                                        | CLASSIFICATION OF MATERIALS<br>(Describe)                                                          |           | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                    |        | BLOWS |  |
| -9.5'                     |  | 36'   | c                                                                                                             | d                                                                                                  |           | e                       | JAR                     | g                                                                                                                                                       |        |       |  |
| 11.0'                     |  |       |                             | SP-Greyish tan poorly graded<br>fine to med.sand,few grey<br>streaks,trace of silt & mica,<br>wet. |           |                         | 13                      |                                                                                                                                                         |        | 27    |  |
| -12.5'                    |  |       |                                                                                                               | Medium grained.                                                                                    |           |                         |                         |                                                                                                                                                         |        | 26    |  |
| -14.0'                    |  | 35    |                                                                                                               | Fine to med.grained,few thin<br>clayey layers,trace of de-<br>cayed wood.                          |           |                         | 14                      |                                                                                                                                                         |        | 27    |  |
| -15.5'                    |  |       |                                                                                                               | No clayey layers or wood.                                                                          |           |                         |                         |                                                                                                                                                         |        | 33    |  |
| -18.5'                    |  | 40    |                                                                                                               | Few very thin clayey layers.                                                                       |           |                         |                         |                                                                                                                                                         |        | 30    |  |
| -21.5'                    |  |       |                                                                                                               | Fine grained,no clay.                                                                              |           |                         | 15                      |                                                                                                                                                         |        | 47    |  |
| -23.0'                    |  |       |                                                                                                               | Few very thin grey silty layers.                                                                   |           |                         |                         |                                                                                                                                                         |        | 31    |  |
|                           |  |       |                                                                                                               | Fine to med.grained,no<br>silty layers.                                                            |           |                         |                         |                                                                                                                                                         |        | 30    |  |
|                           |  | 45    |                                                                                                               | Few thin grey silty layers.                                                                        |           |                         | 16                      | NOTE:<br>64.5'to 66.0'No<br>split spoon drive<br>taken. Boring was<br>inadvertantly cleaned<br>out to 66.0'after<br>last split spoon drive<br>to 64.5'. |        | 29    |  |
| -27.0'                    |  |       |                                                                                                               | Fine grained,no silty layers.                                                                      |           |                         |                         |                                                                                                                                                         |        | 33    |  |
| -29.0'                    |  | 50    | Fine to med.grained.                                                                                          |                                                                                                    |           |                         |                         |                                                                                                                                                         | 29     |       |  |
|                           |  |       | Few thin grey silty layers.                                                                                   |                                                                                                    |           | 17                      |                         |                                                                                                                                                         | 22     |       |  |
| -32.0'                    |  |       | Med.to coarse grained,no<br>silty layers.                                                                     |                                                                                                    |           |                         |                         |                                                                                                                                                         | 37     |       |  |
| -33.5'                    |  |       | Trace of fine gravel.                                                                                         |                                                                                                    |           |                         |                         |                                                                                                                                                         | 35     |       |  |
| -35.0'                    |  | 55    | No gravel.                                                                                                    |                                                                                                    |           | 18                      |                         |                                                                                                                                                         | 29     |       |  |
| -36.5'                    |  |       | Fine to med.grained,trace<br>of fine gravel.                                                                  |                                                                                                    |           |                         |                         |                                                                                                                                                         | 31     |       |  |
| -38.0'                    |  |       | Med.grained.                                                                                                  |                                                                                                    |           | 19                      |                         |                                                                                                                                                         | 27     |       |  |
|                           |  | 60    | See Remarks.                                                                                                  |                                                                                                    |           |                         |                         |                                                                                                                                                         | 38     |       |  |
| -41.0'                    |  |       | SP-Greyish tan poorly graded<br>fine to med.sand,few grey<br>streaks,trace of silt,mica<br>& fine gravel,wet. |                                                                                                    |           | 20                      |                         |                                                                                                                                                         | 24     |       |  |
| -42.5'                    |  |       | Tan to greyish tan,med.to<br>coarse grained,some fine<br>gravel.                                              |                                                                                                    |           | 21                      |                         |                                                                                                                                                         | 27     |       |  |
| -44.0'                    |  | 65    |                                                                                                               |                                                                                                    |           |                         |                         |                                                                                                                                                         | 33     |       |  |
| -45.5'                    |  |       |                                                                                                               |                                                                                                    |           |                         |                         |                                                                                                                                                         | 37     |       |  |
| -48.5'                    |  |       |                                                                                                               |                                                                                                    |           | 22                      |                         |                                                                                                                                                         | 37     |       |  |
| -50.0'                    |  | 70    |                                                                                                               |                                                                                                    |           |                         |                         |                                                                                                                                                         | 35     |       |  |
|                           |  |       | Bottom of Boring 70.5'                                                                                        |                                                                                                    |           |                         |                         |                                                                                                                                                         | 41     |       |  |

NOTE:  
64.5' to 66.0' No  
spitspoon drive  
taken. Boring was  
inadvertantly cleaned  
out to 66.0' after  
last spitspoon drive  
to 64.5'.

See note

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                               | INSTALLATION<br>Savannah, Ga.                                      |                                 | HOLE NO. SH-134<br>SHEET 1<br>OF 2 SHEETS                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                               | 10. SIZE AND TYPE OF BIT 3/8" splitspoon, 6" spiral                |                                 |                                                                                      |  |
| 2. LOCATION (Coordinate or Station)<br>X=825435 Y=766770                                                                     |       |                            |                                                                                               | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)<br>MLW auger & fishtail |                                 |                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314             |                                 |                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-134                                                            |       |                            |                                                                                               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                         |                                 | 14. TOTAL NUMBER CORE BOXES                                                          |  |
| 5. NAME OF DRILLER<br>J. Butts                                                                                               |       |                            |                                                                                               | 15. EL. ATION GROUND WATER                                         |                                 | 16. DATE HOLE                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                               | 17. ELEVATION TOP OF HOLE 8.1'                                     |                                 | 18. TOTAL CORE RECOVERY FOR BORING N/A                                               |  |
| 7. THICKNESS OF OVERBURDEN 58.5'                                                                                             |       |                            |                                                                                               | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist              |                                 | 19. SIGNATURE OF INSPECTOR                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                               |                                                                    |                                 |                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 58.5'                                                                                                 |       |                            |                                                                                               |                                                                    |                                 |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVERY                                                 | CORE OR<br>SAMPLE<br>NO.<br>JWB | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| 8.1'                                                                                                                         | 0'    | c                          | SM-Brown & orange silty fine to med. sand, some roots, damp.                                  |                                                                    | 1                               | BLOWS                                                                                |  |
| 6.6'                                                                                                                         |       |                            | SP-Orange poorly graded fine to med. sand, trace of roots, damp.                              |                                                                    | 2                               | Water level 1.0' depth to water during drilling.                                     |  |
| 5.1'                                                                                                                         |       |                            | SM-Light brown & orange silty med. to coarse sand, trace of fine gravel, wet. See remarks.    |                                                                    | 3                               | 3.0' to 4.5' No split-spoon recovery. Sample #3 taken from auger.                    |  |
| 3.6'                                                                                                                         |       |                            | Light brown & grey.                                                                           |                                                                    | 4                               |                                                                                      |  |
| 2.1'                                                                                                                         |       |                            | Grey, fine to med. grained, no gravel.                                                        |                                                                    | 5                               | Grouted hole after completion of boring.                                             |  |
| 0.6'                                                                                                                         |       |                            | Med. to coarse grained, trace of fine gravel.                                                 |                                                                    | 6                               | No 24 hour water level reading taken.                                                |  |
| -0.9'                                                                                                                        |       |                            | CH-Greyish brown fat clay, some roots, trace of wood, damp.                                   |                                                                    | 7                               | Began using Revert drilling mud at 9.0'.                                             |  |
| -2.4'                                                                                                                        |       |                            | Greenish grey, trace of roots & mica, no wood.                                                |                                                                    | 8                               | 10.5' to 12.0' Weight of hammer drove splitspoon.                                    |  |
| -3.9'                                                                                                                        |       |                            | No roots.                                                                                     |                                                                    | 9                               |                                                                                      |  |
| -5.4'                                                                                                                        |       |                            | Some fine silty sand @ 14.7'.                                                                 |                                                                    | 10                              |                                                                                      |  |
| -6.9'                                                                                                                        |       |                            | SM-Greenish grey silty fine sand, trace of clay & mica, wet.                                  |                                                                    | 11                              |                                                                                      |  |
| -8.4'                                                                                                                        |       |                            | No recovery, see remarks.                                                                     |                                                                    |                                 |                                                                                      |  |
| -9.9'                                                                                                                        |       |                            | SM-Greenish grey silty fine to med. sand, trace of clay & mica, wet.                          |                                                                    |                                 |                                                                                      |  |
| -11.4'                                                                                                                       |       |                            | SP-Greyish tan poorly graded fine to med. sand, trace of silt, mica & wood, wet.              |                                                                    |                                 |                                                                                      |  |
| -12.9'                                                                                                                       |       |                            | No wood.                                                                                      |                                                                    |                                 |                                                                                      |  |
| -14.4'                                                                                                                       |       |                            | Few thin grey silty layers.                                                                   |                                                                    |                                 |                                                                                      |  |
| -15.9'                                                                                                                       |       |                            | SM-Tannish grey silty med. sand, trace of mica, wet.                                          |                                                                    |                                 |                                                                                      |  |
| -17.4'                                                                                                                       |       |                            | Fine to med. grained, some wood, trace of clay & leaves.                                      |                                                                    |                                 |                                                                                      |  |
| -18.9'                                                                                                                       |       |                            | SP-Greyish tan poorly graded med. sand, few very thin grey layers, trace of silt & mica, wet. |                                                                    |                                 |                                                                                      |  |
| -20.4'                                                                                                                       |       |                            |                                                                                               |                                                                    |                                 |                                                                                      |  |
| -21.9'                                                                                                                       |       |                            |                                                                                               |                                                                    |                                 |                                                                                      |  |
| Continued on sht 2                                                                                                           |       |                            |                                                                                               |                                                                    |                                 |                                                                                      |  |



| DRILLING LOG                                                                                                                 |  | DIVISION      | INSTALLATION                                                               |  | File No.            |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------|----------------------------------------------------------------------------|--|---------------------|
| South Atlantic                                                                                                               |  | Savannah, Ga. | SH-135                                                                     |  | SHEET 1 OF 2 SHEETS |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |  |               | 10. SIZE AND TYPE OF BIT 3/8" split spoon, 6"                              |  |                     |
| 2. LOCATION (Coordinates or Station)<br>X=826560 Y=765908                                                                    |  |               | 11. DAY ON FOR ELEVATION SHOWN (TBM or MLW)<br>MLW spiral auger & fishtail |  |                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  |               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                     |  |                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-135                                                            |  |               | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                             |  |                     |
| 5. NAME OF DRILLER<br>J. Burts                                                                                               |  |               | 14. TOTAL NUMBER CORE BOXES (1)                                            |  |                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |               | 15. EL. ATION GROUND WATER See remarks                                     |  |                     |
| 7. THICKNESS OF OVERBURDEN 63.0'                                                                                             |  |               | 16. DATE HOLE STARTED 20 March 1987 COMPLETED 21 March 1987                |  |                     |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |  |               | 17. ELEVATION TOP OF HOLE 12.1'                                            |  |                     |
| 9. TOTAL DEPTH OF HOLE 63.0'                                                                                                 |  |               | 18. TOTAL CORE RECOVERY FOR BORING N/A 1                                   |  |                     |
|                                                                                                                              |  |               | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                      |  |                     |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)  |    |
|-----------|-------|--------|--------------------------------------------------------------------------------------------------|--------------------|-------------------------|---------------------------------------------------------------------------------------|----|
| 12.1'     | 0     |        |                                                                                                  |                    |                         |                                                                                       |    |
| 10.6'     |       |        | SP-Light brown to orange<br>poorly graded med. sand, trace<br>of silt & roots, dry.              |                    | 1                       | Water level 4.5'<br>depth to water during<br>drilling.                                | 2  |
| 9.1'      |       |        | Damp.                                                                                            |                    |                         |                                                                                       | 6  |
| 7.6'      |       |        | Fine to med. grained, trace<br>of wood.                                                          |                    | 2                       | Grouted hole after<br>completion of boring.<br>No 24 hr. water level<br>reading made. | 6  |
| 6.1'      |       |        | No wood, wet.                                                                                    |                    |                         |                                                                                       | 5  |
| 4.6'      |       |        | Brown & orange, med. grain-<br>ed.                                                               |                    |                         | 7.5' -9.0' -No split-<br>spoon recovery-<br>examined sample from<br>auger.            | 3  |
| 3.1'      |       |        | Grey, trace of fine gravel<br>& mica. (see remarks)                                              |                    | 3                       |                                                                                       | 2  |
| 1.6'      |       |        | CH-Greyish brown fat clay,<br>some roots, trace of fine<br>sand & mica, damp.                    |                    |                         | Began using Revert<br>drilling mud @ 9.0'.                                            | 1  |
| 0.1'      |       |        | Greenish grey, trace of<br>roots.                                                                |                    | 4                       | LAB CLASSIFICATION                                                                    | 1  |
| -1.4'     |       |        | Several thin layers of fine<br>sand.                                                             |                    |                         | No. Class LL PL PI                                                                    | 5  |
|           |       |        | Several very thin layers of<br>fine to med. sand.                                                |                    | 5                       | 3 CH 172 60 122                                                                       | 5  |
|           |       |        | SM-Greyish tan silty, fine<br>to med. sand, trace of mica,<br>several thin clayey layers<br>wet. |                    | 6                       | 5 SC NP NP NP                                                                         | 17 |
|           |       |        |                                                                                                  |                    | 7                       | 6 SM 43 31 17                                                                         | 17 |
|           |       |        |                                                                                                  |                    | 8                       | 9 SP NP NP NP                                                                         | 15 |
|           |       |        |                                                                                                  |                    | 9                       | 13 SM NP NP NP                                                                        | 9  |
|           |       |        |                                                                                                  |                    | 10                      | 16 SP NP NP NP                                                                        | 9  |
|           |       |        |                                                                                                  |                    | 11                      |                                                                                       | 2  |
|           |       |        |                                                                                                  |                    | 12                      | 24.0' to 25.5' -Weight<br>hammer drove split-<br>spoon.                               | 2  |
|           |       |        |                                                                                                  |                    | 13                      |                                                                                       | 0  |
|           |       |        |                                                                                                  |                    | 14                      |                                                                                       | 7  |
|           |       |        |                                                                                                  |                    | 15                      |                                                                                       | 9  |
|           |       |        |                                                                                                  |                    | 16                      |                                                                                       | 17 |
|           |       |        |                                                                                                  |                    | 17                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 18                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 19                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 20                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 21                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 22                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 23                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 24                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 25                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 26                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 27                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 28                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 29                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 30                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 31                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 32                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 33                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 34                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 35                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 36                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 37                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 38                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 39                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 40                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 41                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 42                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 43                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 44                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 45                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 46                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 47                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 48                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 49                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 50                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 51                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 52                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 53                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 54                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 55                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 56                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 57                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 58                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 59                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 60                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 61                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 62                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 63                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 64                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 65                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 66                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 67                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 68                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 69                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 70                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 71                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 72                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 73                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 74                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 75                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 76                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 77                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 78                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 79                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 80                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 81                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 82                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 83                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 84                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 85                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 86                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 87                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 88                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 89                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 90                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 91                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 92                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 93                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 94                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 95                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 96                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 97                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 98                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 99                      |                                                                                       |    |
|           |       |        |                                                                                                  |                    | 100                     |                                                                                       |    |



| DRILLING LOG (Cont Sheet) |       |        | ELEVATION TOP OF HOLE                                                                            |                 | Hole No.                                                                                       |                                                                                   |
|---------------------------|-------|--------|--------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| PROJECT                   |       |        | 12.1' MLW                                                                                        |                 | SH-135                                                                                         |                                                                                   |
| INSTALLATION              |       |        | Savannah, Ga.                                                                                    |                 | SHEET 2 OF 2 SHEETS                                                                            |                                                                                   |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY | BOX OR SAMPLE NO. J&R                                                                          | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |
| "                         | 30'   | c      | d                                                                                                | e               |                                                                                                | BLOWS                                                                             |
|                           |       |        | SP-Greyish tan poorly graded fine to med. sand, trace of silt & mica, wet.                       |                 |                                                                                                | 22                                                                                |
| -22.4'                    |       |        | Fine grained.                                                                                    |                 | 9                                                                                              | 12                                                                                |
| -23.9'                    | 35    |        | Fine to med. grained.                                                                            |                 | 10                                                                                             | 30                                                                                |
|                           |       |        |                                                                                                  |                 |                                                                                                | 25                                                                                |
| -26.9'                    |       |        | Fine Grained.                                                                                    |                 |                                                                                                | 18                                                                                |
| -28.4'                    | 40    |        | Fine to med. grained.                                                                            |                 | 11                                                                                             | 25                                                                                |
|                           |       |        |                                                                                                  |                 |                                                                                                | 27                                                                                |
| -31.4'                    |       |        | Several very thin grey clayey layers.                                                            |                 |                                                                                                | 15                                                                                |
| -32.9'                    | 45    |        | No clay.                                                                                         |                 | 12                                                                                             | 29                                                                                |
| -34.4'                    |       |        | SM-Tannish grey, silty, fine to med. sand, trace of clay & mica, wet.                            |                 | 13                                                                                             | 27                                                                                |
| -35.9'                    |       |        |                                                                                                  |                 | 14                                                                                             | 19                                                                                |
|                           |       |        |                                                                                                  |                 |                                                                                                | 27                                                                                |
| -38.9'                    | 50    |        | SP-Greyish tan, poorly graded fine to med. sand, trace of silt & mica, wet.                      |                 |                                                                                                | 15                                                                                |
| -40.4'                    |       |        | Med. grained, trace of clay in several thin grey layers.                                         |                 | 15                                                                                             | 21                                                                                |
| -41.9'                    |       |        | Trace of fine gravel.                                                                            |                 |                                                                                                | 26                                                                                |
| -43.4'                    | 55    |        | Trace of fine to coarse gravel.                                                                  |                 | 16                                                                                             | 24                                                                                |
|                           |       |        |                                                                                                  |                 |                                                                                                | 22                                                                                |
| -46.4'                    | 60    |        | Med. to coarse grained, trace of fine gravel.                                                    |                 | 17                                                                                             | 26                                                                                |
|                           |       |        | SM-Dark greyish green, silty fine sand, trace of clay & mica, damp.                              |                 | 18                                                                                             | 28                                                                                |
| -50.9'                    |       |        |                                                                                                  |                 |                                                                                                | 25                                                                                |
|                           | 65    |        | Bottom of Boring @ 63.0'                                                                         |                 |                                                                                                | 51                                                                                |
|                           |       |        | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                 | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID slitspoon w/ 140 lb. hammer falling 30". |                                                                                   |



| DRILLING LOG                                                                                                                 |            | DIVISION      |                                                                                  | INSTALLATION                                               |                                | SHEET                                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|---------------|----------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| South Atlantic                                                                                                               |            | Savannah, Ga. |                                                                                  | SA-136                                                     |                                | 1                                                                                                |  |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |               |                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 6" spiral      |                                |                                                                                                  |  |
| 2. LOCATION (Coordinate or Station)<br>-R30150 Y=762100                                                                      |            |               |                                                                                  | 11. DAYUM FOR ELEVATION SHOWN (FPM or MSL)<br>MSL          |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |               |                                                                                  | 12. MANUFACTURE & DESIGNATION OF DRILL<br>Falline 111      |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SU-136                                                            |            |               |                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN             |                                |                                                                                                  |  |
| 5. NAME OF DRILLER<br>L. Lucas                                                                                               |            |               |                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                              |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |               |                                                                                  | 15. ELEVATION GROUND WATER See remarks                     |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 58.1'                                                                                             |            |               |                                                                                  | 16. DATE HOLE<br>STARTED 28 Mar 1987 COMPLETED 30 Mar 1987 |                                |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |               |                                                                                  | 17. ELEVATION TOP OF HOLE 9.2'                             |                                |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 33.1'                                                                                                 |            |               |                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                     |                                |                                                                                                  |  |
| 19. SIGNATURE OF INSPECTION<br>[Signature]                                                                                   |            |               |                                                                                  | 20. SIGNATURE OF FIELD LOGGIST<br>[Signature]              |                                |                                                                                                  |  |
| ELEVATION<br>e                                                                                                               | DEPTH<br>d | LEGEND<br>c   | CLASSIFICATION OF MATERIALS<br>(Description)<br>f                                | % CORE<br>RECOVERY<br>g                                    | BOX OR<br>SAMPLE<br>NO.<br>J/K | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>h        |  |
| 7.7'                                                                                                                         |            |               | SM-Light brown silty fine to med. sand, trace of clay, mica, roots & wood, damp. |                                                            | 1                              | Water level 3.0' depth to water during drilling.                                                 |  |
| 6.2'                                                                                                                         |            |               | No wood or roots, moist.                                                         |                                                            |                                |                                                                                                  |  |
| 4.7'                                                                                                                         |            |               | No clay, wet.                                                                    |                                                            |                                |                                                                                                  |  |
| 1.7'                                                                                                                         |            |               | Light brown & grey.                                                              |                                                            | 2                              | No 24 hour water level reading taken. Hole grouted after completion of boring.                   |  |
| -1.3'                                                                                                                        |            |               | SP-Grey poorly graded fine to med. sand, trace of silt, mica & wood, wet.        |                                                            | 3                              | Began using Revert drilling mud at 7.5'.                                                         |  |
| -2.8'                                                                                                                        |            |               | SM-Grey silty fine to med. sand, trace of mica, wet.                             |                                                            | 4                              | Weight of hammer drove splitspoon from 12.0' to 13.5'.                                           |  |
| -4.3'                                                                                                                        |            |               | CH-Brown fat clay, moist.                                                        |                                                            | 5                              |                                                                                                  |  |
| -5.8'                                                                                                                        |            |               | Greyish brown, trace of fine sand in thin layers, trace of wood, damp.           |                                                            |                                | LAB CLASSIFICATION                                                                               |  |
| -7.3'                                                                                                                        |            |               | Dark grey, no wood.                                                              |                                                            | 6                              | No. Class LL PL PI                                                                               |  |
| -8.8'                                                                                                                        |            |               | Several thin & very thin sand layers.                                            |                                                            | 7                              | 1 1 1 1                                                                                          |  |
| -11.8'                                                                                                                       |            |               | SM-Grey silty fine to med. sand, trace of clay & mica, wet.                      |                                                            | 8                              | 2 2 2 2                                                                                          |  |
| -13.3'                                                                                                                       |            |               | CH-Grey fat clay, some fine to med. sand in thick layers, trace of mica, wet.    |                                                            | 9                              | 3 3 3 3                                                                                          |  |
| -14.8'                                                                                                                       |            |               | Dark greenish grey, trace of fine sand in several very thin layers, damp.        |                                                            | 10                             | 4 4 4 4                                                                                          |  |
| -16.3'                                                                                                                       |            |               | Dark greyish brown, trace of leaves, mica, no sand.                              |                                                            | 11                             | 5 5 5 5                                                                                          |  |
| -17.8'                                                                                                                       |            |               | OH-Dark brown organic clay, layer of light grey fat clay 26.8'-27.0'             |                                                            |                                | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |  |
| -19.3'                                                                                                                       |            |               | CH-Light grey fat clay, some silt & fine sand, trace of                          |                                                            |                                | BLOWS PER FOOT:                                                                                  |  |
| -20.8'                                                                                                                       |            |               |                                                                                  |                                                            |                                | Number required to                                                                               |  |

| DRILLING LOG (Cont Sheet)                                                                       |       | ELEVATION TOP OF HOLE                                                               |                                                                                   | 9.2' MLW                                                                                        |                                | Hole No. SH-136                                                                      |       |
|-------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                                                                                         |       | INSTALLATION                                                                        |                                                                                   | SHEET 2 OF 2 SHEETS                                                                             |                                |                                                                                      |       |
| Savannah Harbor Widening                                                                        |       | Savannah, Ga.                                                                       |                                                                                   |                                                                                                 |                                |                                                                                      |       |
| ELEVATION                                                                                       | DEPTH | LEGEND                                                                              | CLASSIFICATION OF MATERIALS<br>(Description)                                      | % CORE<br>RECOVERY                                                                              | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS |
| -29.8'                                                                                          | 30'   | c                                                                                   | d                                                                                 | e                                                                                               |                                |                                                                                      |       |
|                                                                                                 |       |    | SM-Light grey silty fine sand, some mica, trace of clay, wet.                     |                                                                                                 | 12                             | 33.0' to 34.5' - Spring missing in splitspoon. Installed new spring.                 | 7     |
| -23.8'                                                                                          |       |    | No recovery, see remarks.                                                         |                                                                                                 |                                |                                                                                      | 8     |
| -25.3'                                                                                          |       |    | SC-Light grey clayey fine sand, some mica, trace of silt, wet.                    |                                                                                                 | 13                             |                                                                                      | 4     |
| -26.8'                                                                                          | 35    |    |                                                                                   |                                                                                                 |                                |                                                                                      | 2     |
| -28.3'                                                                                          |       |    | Trace of wood.                                                                    |                                                                                                 | 14                             |                                                                                      | 8     |
| -29.8'                                                                                          |       |    |                                                                                   |                                                                                                 |                                |                                                                                      | 24    |
|                                                                                                 | 40    |    | SM-Grey silty fine sand, some mica, wet.                                          |                                                                                                 | 15                             |                                                                                      | 41    |
| -32.8'                                                                                          |       |    | SP-Grey poorly graded fine sand, trace of silt & mica, wet.                       |                                                                                                 |                                |                                                                                      | 63    |
| -33.8'                                                                                          |       |    | Fine to med. grained.                                                             |                                                                                                 | 16                             |                                                                                      | 36    |
| -35.8'                                                                                          | 45    |    | Tannish grey, med. to coarse grained.                                             |                                                                                                 |                                |                                                                                      | 23    |
| -38.8'                                                                                          |       |    | Coarse grained, trace of fine gravel.                                             |                                                                                                 | 17                             |                                                                                      | 24    |
| -41.8'                                                                                          | 50    |    | Some fine gravel, trace of clayey coarse sand in several thin layers.             |                                                                                                 |                                |                                                                                      | 15    |
| -43.3'                                                                                          |       |    | Several very thin grey & green clay layers.                                       |                                                                                                 | 18                             |                                                                                      | 7     |
| -46.3'                                                                                          | 55    |   | CC-Grey clayey fine gravel, some coarse sand, trace of coarse gravel & mica, wet. |                                                                                                 | 19                             |                                                                                      | 8     |
| -47.1'                                                                                          |       |  | CL-Green lean clay, trace of fine sand & silt in several very thin layers, damp.  |                                                                                                 | 20                             |                                                                                      | 9     |
| -48.1'                                                                                          |       |  | SM Green silty fine sand, trace of clay, damp.                                    |                                                                                                 | 21                             |                                                                                      | 26    |
|                                                                                                 |       |                                                                                     | Bottom of Boring @ 58.1'                                                          |                                                                                                 |                                |                                                                                      | 31    |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System |       |                                                                                     |                                                                                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30". |                                |                                                                                      |       |

| DRILLING LOG                                                                                                                 |  | DIVISION       |  | INSTALLATION                                                         |  | SHEET 1 OF 2 SHEETS        |  |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------|--|----------------------------------------------------------------------|--|----------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |  | South Atlantic |  | Savannah, Ga.                                                        |  |                            |  |
| 2. LOCATION (Coordinates or Station)<br>X=H0965 Y=761480                                                                     |  |                |  | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 6" spiral                |  |                            |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  |                |  | 11. DAY/UP FOR ELEVATION BROWN (TBM or BGL)<br>MLW angler & fishtail |  |                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-137                                                            |  |                |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 114               |  |                            |  |
| 5. NAME OF DRILLER<br>J. Putts                                                                                               |  |                |  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                       |  | DISTURBED 18 UNDISTURBED 0 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                |  | 14. TOTAL NUMBER CORE BOXES 0                                        |  |                            |  |
| 7. THICKNESS OF OVERBURDEN 60.0'                                                                                             |  |                |  | 15. L - VATION GROUND WATER<br>See Remarks                           |  |                            |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |  |                |  | 16. DATE HOLE STARTED 14 Mar 1987 COMPLETED 16 Mar 1987              |  |                            |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |  |                |  | 17. ELEVATION TOP OF HOLE 10.5'                                      |  |                            |  |
|                                                                                                                              |  |                |  | 18. TOTAL CORE RECOVERY FOR BORING N/A                               |  |                            |  |
|                                                                                                                              |  |                |  | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist                |  |                            |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                             | SCORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                   | BLOWS |
|-----------|-------|--------|------------------------------------------------------------------------------------------|-------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------|-------|
| 10.5'     | 04    | a      |                                                                                          |                   | 1                              |                                                                                                                        |       |
| 9.0'      |       |        | SP-Light brown & tan poorly<br>graded fine to med. sand, dry.                            |                   |                                | Water level 3.0'                                                                                                       | 4     |
| 7.5'      |       |        | Tan, some silty orange streaks.                                                          |                   |                                | depth to water                                                                                                         | 9     |
| 6.0'      |       |        | Wet.                                                                                     |                   |                                | during drilling.                                                                                                       | 9     |
| 4.5'      | 5     |        | SM-Light brown, tan & orange<br>silty fine to med. sand, wet.                            |                   | 2                              | No 24 hour water<br>level reading taken.                                                                               | 9     |
| 3.0'      |       |        | Light brown to orange, some<br>tan streaks.                                              |                   |                                | Backfilled hole w/<br>grout after comple-<br>tion of boring.                                                           | 8     |
| 1.5'      |       |        | SP-Grey poorly graded med.<br>sand, wet.                                                 |                   | 3                              |                                                                                                                        | 3     |
| 0.0'      | 10    |        | Fine to med. grained, few thin<br>dark grey clayey layers,<br>trace of mica.             |                   | 4                              | Began using Revert<br>drilling mud at                                                                                  | 4     |
| -1.5'     |       |        | Piece of wood from approx.<br>10.5' to 10.6'.                                            |                   | 5                              | 7.5'.                                                                                                                  | 37    |
| -3.0'     |       |        | CH-Grey & brown fat clay, trace<br>of wood & mica, damp.                                 |                   | 6                              | LAB CLASSIFICATION                                                                                                     | 1     |
| -3.5'     | 15    |        | Brown, no wood.                                                                          |                   |                                | No. Class LL PL PI                                                                                                     | 9     |
| -6.0'     |       |        | SP-Tan poorly graded fine to<br>med. sand, few thin grey streaks,<br>trace of silt, wet. |                   |                                | 5 MH 108 49 59                                                                                                         | 17    |
| -7.5'     |       |        | Med. grained, trace of fine<br>gravel.                                                   |                   |                                | 7 CH 145 41 104                                                                                                        | 5     |
| -9.0'     | 20    |        | CH-Grey to greenish grey fat<br>clay, damp.                                              |                   |                                | 8 SP-SM NP NP NP                                                                                                       | 1     |
| -10.5'    |       |        | Grey, trace of tan fine sand<br>in very thin layers.                                     |                   |                                | 10 CH 171 56 115                                                                                                       | 4     |
| -12.0'    |       |        | SP-Tannish grey poorly graded<br>fine sand, trace of silt &<br>mica, wet.                |                   | 8                              | 13 SP NP NP NP                                                                                                         | 3     |
| -13.5'    | 25    |        | Fine to med. grained, trace<br>of clay in thin dark grey<br>layers.                      |                   | 9                              | 17 SP-SG - - -                                                                                                         | 0     |
| -18.0'    |       |        | CH-Grey to greenish grey fat<br>clay, trace of mica, damp.                               |                   |                                | Weight of hammer<br>drove splitspoon<br>from 24.0' to 25.5';<br>25.5' to 27.0'; 27.0'<br>to 28.5' & 28.5' to<br>30.0'. | 0     |
| -19.5'    | 30    |        | Layer of med. grained sand<br>at approx. 29.7'.                                          |                   | 10                             |                                                                                                                        | 0     |
|           |       |        | Continued on sh. 2                                                                       |                   |                                | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" splitspoon w/<br>140 lb. hammer falling<br>30".                  | 0     |

NOTE: See file for details.

| DRILLING LOG (Cont Sheet) |       |        | ELEVATION TOP OF HOLE                                                                           |                    | 10.5' MLW               |                                                                                                                  | Hole No. |       | SH-137        |   |    |
|---------------------------|-------|--------|-------------------------------------------------------------------------------------------------|--------------------|-------------------------|------------------------------------------------------------------------------------------------------------------|----------|-------|---------------|---|----|
| PROJECT                   |       |        | Savannah Harbor Widening                                                                        |                    |                         | INSTALLATION                                                                                                     |          |       | Savannah, Ga. |   |    |
| SHEET 2                   |       |        | OF 2                                                                                            |                    |                         | SHEETS                                                                                                           |          |       |               |   |    |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                    | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                             |          | BLOWS |               |   |    |
| a                         | b     | c      | d                                                                                               | e                  | f                       | g                                                                                                                | h        | i     | j             | k | l  |
| -21.0'                    |       |        | See Remarks.                                                                                    |                    |                         |                                                                                                                  |          |       |               |   |    |
|                           |       |        | SM-Light grey silty fine sand,<br>trace of mica, wet.                                           |                    | 11                      | 30.0' to 31.5'-No<br>recovery, material<br>probably sand,<br>same as shown in last<br>part of previous<br>drive. |          |       |               |   | 7  |
| -24.0'                    |       |        | Some grey to dark grey streaks.                                                                 |                    |                         |                                                                                                                  |          |       |               |   | 12 |
| -25.5'                    | 35    |        | SP-Light grey to tannish grey<br>poorly graded fine sand, trace<br>of silt & mica, wet.         |                    | 12                      |                                                                                                                  |          |       |               |   | 10 |
|                           |       |        |                                                                                                 |                    |                         |                                                                                                                  |          |       |               |   | 16 |
| -28.5'                    |       |        | Fine to med. grained, some<br>grey streaks.                                                     |                    |                         |                                                                                                                  |          |       |               |   | 28 |
|                           | 40    |        |                                                                                                 |                    |                         |                                                                                                                  |          |       |               |   | 25 |
| -31.5'                    |       |        | Med. grained, trace of fine<br>gravel, no grey streaks.                                         |                    | 13                      |                                                                                                                  |          |       |               |   | 25 |
| -33.0'                    |       |        | Med. to coarse grained.                                                                         |                    |                         |                                                                                                                  |          |       |               |   | 37 |
| -34.5'                    | 45    |        | No gravel.                                                                                      |                    |                         |                                                                                                                  |          |       |               |   | 26 |
| -36.0'                    |       |        | Trace of fine gravel.                                                                           |                    | 14                      |                                                                                                                  |          |       |               |   | 32 |
|                           |       |        | Greyish tan, coarse grained,<br>no gravel.                                                      |                    |                         |                                                                                                                  |          |       |               |   | 27 |
| -39.0'                    |       |        | Trace of fine gravel.                                                                           |                    |                         |                                                                                                                  |          |       |               |   | 29 |
| -40.5'                    | 50    |        | Tannish grey, med. to coarse<br>grained.                                                        |                    | 15                      |                                                                                                                  |          |       |               |   | 26 |
| -42.0'                    |       |        | GM-Tannish grey silty fine<br>gravel, some coarse sand,<br>wet.                                 |                    |                         |                                                                                                                  |          |       |               |   | 23 |
| -43.5'                    |       |        |                                                                                                 |                    | 16                      |                                                                                                                  |          |       |               |   | 14 |
| -45.0'                    | 55    |        | GC-Grey clayey fine gravel,<br>some coarse sand, wet.                                           |                    | 17                      |                                                                                                                  |          |       |               |   | 10 |
|                           |       |        |                                                                                                 |                    |                         |                                                                                                                  |          |       |               |   | 7  |
| -48.0'                    |       |        | CH-Greyish green fat clay,<br>some fine gravel & coarse<br>sand, trace of mica & silt,<br>damp. |                    | 18                      |                                                                                                                  |          |       |               |   | 18 |
| -49.5'                    | 60    |        |                                                                                                 |                    |                         |                                                                                                                  |          |       |               |   | 38 |
|                           |       |        | Bottom of Boring @ 60.0'                                                                        |                    |                         |                                                                                                                  |          |       |               |   |    |

Hole No. 151

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                               | INSTALLATION<br>SAVANNAH, GA.                                                                           |                                | SHEET 1<br>of 2 SHEETS                                                           |                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                               | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 6" spiral auger, 10" roller rock bit & 2 1/2" fish tail |                                |                                                                                  |                                                                                                |
| 2. LOCATION (Coordinates or Station)<br>X=822130 Y=769655 GA. EAST                                                           |             |                            |                                                                                               | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                       |                                |                                                                                  |                                                                                                |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                                  |                                |                                                                                  |                                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-151                                                            |             |                            |                                                                                               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 15<br>UNDISTURBED : 0                         |                                |                                                                                  |                                                                                                |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                               | 14. TOTAL NUMBER CORE BOXES                                                                             |                                |                                                                                  |                                                                                                |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                               | 15. ELEVATION GROUND WATER<br>SEE REMARKS                                                               |                                |                                                                                  |                                                                                                |
| 7. THICKNESS OF OVERBURDEN<br>60.0'                                                                                          |             |                            |                                                                                               | 16. DATE HOLE<br>STARTED : 22 OCT 91<br>COMPLETED : 22 OCT 91                                           |                                |                                                                                  |                                                                                                |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                               | 17. ELEVATION TOP OF HOLE<br>10.7'                                                                      |                                |                                                                                  |                                                                                                |
| 9. TOTAL DEPTH OF HOLE<br>60.0'                                                                                              |             |                            |                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                               |                                |                                                                                  |                                                                                                |
|                                                                                                                              |             |                            |                                                                                               | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                        |                                |                                                                                  |                                                                                                |
| ELEVATION<br>+10.7'                                                                                                          | DEPTH<br>0' | LEGEND<br>#                | CLASSIFICATION OF MATERIALS<br>(Description)<br>#                                             | % CORE<br>RECOVERY                                                                                      | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. If significant) |                                                                                                |
| +9.2'                                                                                                                        |             |                            | (SM) Brown, fine to med. silty SAND. Some roots dry. Asphalt from 1.2'.                       |                                                                                                         | 1                              |                                                                                  | BLOWS                                                                                          |
|                                                                                                                              |             |                            | (SC) Grayish-brown, fine to med., clayey SAND. Very thick asphalt layers, wet at 2.7'.        |                                                                                                         | 2                              |                                                                                  | 70                                                                                             |
| +6.2'                                                                                                                        | 5           |                            | (SM) Grayish-brown, fine silty SAND. Trace of clay, wet.                                      |                                                                                                         | 3                              |                                                                                  | 3                                                                                              |
| +4.7'                                                                                                                        |             |                            | Wash. Contained large amounts of wood & trash (plastic, etc.).                                |                                                                                                         |                                |                                                                                  | Set 8" casing to 9.0' then began using 5/8" fish tail to clean out between split spoon drives. |
| +1.7'                                                                                                                        | 10          |                            | (SC) Greenish-light gray, clayey, fine SAND. Some thin layers of clay & fine sand, damp.      |                                                                                                         | 4                              |                                                                                  | Water level 2.7'. Depth to water during drilling.                                              |
| +0.2'                                                                                                                        |             |                            | Wash.                                                                                         |                                                                                                         |                                |                                                                                  | Water level 2.4'. Depth to water 25 Oct 91. Taped hole to 6.9'd.                               |
| -2.8'                                                                                                                        | 15          |                            | (CH) Light green, fat CLAY. Some coarse sand from 14.7' to 15.0', damp.                       |                                                                                                         | 5                              |                                                                                  |                                                                                                |
| -4.3'                                                                                                                        |             |                            | Wash.                                                                                         |                                                                                                         |                                |                                                                                  |                                                                                                |
| -7.3'                                                                                                                        | 20          |                            | (SP) Greenish-light gray, coarse, poorly graded coarse. Some fine gravel, trace of silt, wet. |                                                                                                         | 6                              |                                                                                  |                                                                                                |
| -8.8'                                                                                                                        |             |                            | Wash.                                                                                         |                                                                                                         |                                |                                                                                  |                                                                                                |
| -11.8'                                                                                                                       | 25          |                            | (CL) Dark gray, silty lean CLAY, trace of mica, dry.                                          |                                                                                                         | 7                              |                                                                                  |                                                                                                |
| -13.3'                                                                                                                       |             |                            | Wash.                                                                                         |                                                                                                         |                                |                                                                                  |                                                                                                |
| -16.3'                                                                                                                       | 30          |                            | (SC) Greenish-gray, fine, clayey SAND. Some silt, trace of mica, dry.                         |                                                                                                         | 8                              |                                                                                  |                                                                                                |
| -17.8'                                                                                                                       |             |                            | Wash.                                                                                         |                                                                                                         |                                |                                                                                  |                                                                                                |
| -19.3'                                                                                                                       |             |                            | Continued on sheet #2                                                                         |                                                                                                         |                                |                                                                                  |                                                                                                |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |             |                            |                                                                                               | BLOWS PER FOOT:<br>Number required to drive 1 1/2" split spoon w/140 lb. hammer 1c                      |                                |                                                                                  |                                                                                                |

| DRILLING LOG (Cont Sheet)            |       | ELEVATION TOP OF HOLE<br>10.7' MLW |                                                                                       | Hole No. SH-151           |                                |                                                                                      |
|--------------------------------------|-------|------------------------------------|---------------------------------------------------------------------------------------|---------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |       | INSTALLATION<br>Savannah, Ga.      |                                                                                       | SHEET 2<br>OF 2 SHEETS    |                                |                                                                                      |
| ELEVATION                            | DEPTH | LEGEND                             | CLASSIFICATION OF MATERIALS<br>(Description)                                          | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -19.3'                               | 30    |                                    |                                                                                       |                           |                                | BLOWS                                                                                |
| -20.8'                               |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -22.3'                               |       |                                    | (SM) Grayish-green & grey, fine silty SAND.<br>Trace of clay & mica, slightly damp.   |                           | 9                              | 38                                                                                   |
|                                      |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -25.3'                               | 35    |                                    |                                                                                       |                           |                                |                                                                                      |
| -26.8'                               |       |                                    | (CL) Grayish-green, silty lean CLAY. Some<br>fine sand, trace of mica, slightly damp. |                           | 10                             | 29                                                                                   |
|                                      |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -29.8'                               | 40    |                                    |                                                                                       |                           |                                |                                                                                      |
| -31.3'                               |       |                                    | (ML) Light greenish-grey & grey, lean SILT.<br>Trace of fine sand, clay & mica, dry.  |                           | 11                             | 54                                                                                   |
|                                      |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -34.3'                               | 45    |                                    |                                                                                       |                           |                                |                                                                                      |
| -35.8'                               |       |                                    | (CL) Greenish-grey, silty lean CLAY. Some fine<br>sand, trace of mica, dry.           |                           | 12                             | 28                                                                                   |
|                                      |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -38.8'                               | 50    |                                    |                                                                                       |                           |                                |                                                                                      |
| -40.3'                               |       |                                    | (SM) Greenish-grey, fine silty SAND. Trace<br>of clay & mica, slightly damp.          |                           | 13                             | 20                                                                                   |
|                                      |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -43.3'                               | 55    |                                    |                                                                                       |                           |                                |                                                                                      |
| -44.8'                               |       |                                    | (SC) Greenish-grey, fine clayey SAND. Some<br>silt, trace of mica, slightly damp.     |                           | 14                             | 54                                                                                   |
|                                      |       |                                    | Wash.                                                                                 |                           |                                |                                                                                      |
| -47.8'                               |       |                                    |                                                                                       |                           |                                |                                                                                      |
| -49.3'                               | 60    |                                    | Same as 54.0' to 55.5'.                                                               |                           | 15                             | 38                                                                                   |
|                                      |       |                                    | Bottom of Boring 60.0'                                                                |                           |                                |                                                                                      |

Hole No. SH-176

|                                                                                                                              |            |                       |                                                                                                  |                                                           |                                     |                                                                                                   |    |
|------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------|----|
| DRILLING LOG                                                                                                                 |            | "SIGN" SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                |                                     | SHEET 1<br>OF 1 SHEETS                                                                            |    |
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" SPLITSPOON, 5/2" FISHTAIL |                                     |                                                                                                   |    |
| 2. LOCATION (Coordinates or Station)<br>X=B18862 Y=775265 GA. EAST                                                           |            |                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or NSD)<br>MLW         |                                     |                                                                                                   |    |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Folling 314    |                                     |                                                                                                   |    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-176                                                            |            |                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                     | DISTURBED 6<br>UNDISTURBED 0                                                                      |    |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                             |                                     |                                                                                                   |    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                       |                                                                                                  | 15. ELEVATION GROUND WATER N/A                            |                                     |                                                                                                   |    |
| 7. THICKNESS OF OVERBURDEN 60.4' (Water 44.2')                                                                               |            |                       |                                                                                                  | 16. DATE HOLE                                             |                                     | STARTED 28 JAN 92<br>COMPLETED 28 JAN 92                                                          |    |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                       |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                            |                                     | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                            |    |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                                 |            |                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                     |                                                                                                   |    |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>=           | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                            | BOX OR<br>SAMPLE<br>NO.<br>f<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g<br>BLOWS |    |
|                                                                                                                              |            |                       | Water                                                                                            |                                                           |                                     | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.7'.                             |    |
|                                                                                                                              | 40         |                       | Bottom of Harbor 44.2'                                                                           |                                                           |                                     |                                                                                                   |    |
| -44.2'                                                                                                                       | 45         |                       | (SC) Dark grey, fine clayey SAND. Trace of silt.                                                 |                                                           | 1                                   | 19                                                                                                |    |
| -47.2'                                                                                                                       |            |                       | Some silt.                                                                                       |                                                           |                                     | 43                                                                                                |    |
| -50.2'                                                                                                                       | 50         |                       |                                                                                                  |                                                           | 2                                   | 43                                                                                                |    |
|                                                                                                                              |            |                       | (CL) Grey, silty, lean CLAY. Some fine sand, trace of mica.                                      |                                                           | 3                                   | 46                                                                                                |    |
| -54.7'                                                                                                                       | 55         |                       |                                                                                                  | Dark grey.                                                |                                     | 4                                                                                                 | 41 |
| -56.2'                                                                                                                       |            |                       |                                                                                                  |                                                           |                                     | 100/0.8                                                                                           |    |
|                                                                                                                              |            |                       | (SC) Dark grey, fine clayey SAND. Trace of silt.                                                 |                                                           | 5                                   | 61                                                                                                |    |
|                                                                                                                              |            |                       |                                                                                                  |                                                           |                                     | 55                                                                                                |    |
|                                                                                                                              |            |                       |                                                                                                  |                                                           | 6                                   | 53                                                                                                |    |
| -60.4'                                                                                                                       | 60         |                       | Bottom of Boring 60.4'                                                                           |                                                           |                                     | 72                                                                                                |    |
|                                                                                                                              |            |                       |                                                                                                  |                                                           |                                     | 100/0.7                                                                                           |    |
|                                                                                                                              |            |                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                                     | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30".  |    |

Hole No. SH-177

| DRILLING LOG                                                                                                                 |                                            | VISION SOUTH ATLANTIC |                                                                                  | INSTALLATION SAVANNAH, GA.                                                                        |                          | SHEET 1 OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |                                            |                       |                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLIT SPOON, 5/2" FISH TAIL                                    |                          |                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X=819910 Y=774717 GA. EAST                                                           |                                            |                       |                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                          |                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |                                            |                       |                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                            |                          |                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-177                                                            |                                            |                       |                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>8                                                   |                          | DISTURBED<br>0                                                                         |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |                                            |                       |                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                          | UNDISTURBED<br>0                                                                       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                            |                       |                                                                                  | 15. ELEVATION GROUND WATER N/A                                                                    |                          |                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>60.8' (Water 41.2')                                                                            |                                            |                       |                                                                                  | 16. DATE HOLE<br>STARTED 28 JAN 92                                                                |                          | COMPLETED 28 JAN 92                                                                    |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |                                            |                       |                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                          | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                              |  |
| 9. TOTAL DEPTH OF HOLE<br>60.8'                                                                                              |                                            |                       |                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                          |                                                                                        |  |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0=                                | LEGEND<br>c           | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                | % CORE RECOVERY<br>s                                                                              | BOX OR SAMPLE NO.<br>CAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |  |
|                                                                                                                              |                                            |                       | Water                                                                            |                                                                                                   |                          | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.7'.                  |  |
|                                                                                                                              | 40                                         |                       | Bottom of Harbor 41.2'                                                           |                                                                                                   |                          |                                                                                        |  |
| -41.2'                                                                                                                       |                                            |                       | (SC) Dark grey, fine clayey SAND. Trace of fine gravel and small wood particles. |                                                                                                   | 1                        | Weight of rods drove split spoon from 41.2' to 42.8'. 0                                |  |
| -42.8'                                                                                                                       | (CL) Dark grey, lean CLAY. Some fine sand. |                       |                                                                                  | 2                                                                                                 |                          |                                                                                        |  |
| -45.8'                                                                                                                       |                                            |                       |                                                                                  | 3                                                                                                 |                          |                                                                                        |  |
|                                                                                                                              | 45                                         |                       | (SC) Dark grey, fine clayey SAND. Trace of silt.                                 |                                                                                                   |                          |                                                                                        |  |
|                                                                                                                              | 50                                         |                       |                                                                                  |                                                                                                   | 4                        |                                                                                        |  |
| -53.3'                                                                                                                       |                                            |                       | (CL) Dark grey, silty lean CLAY. Some fine sand.                                 |                                                                                                   | 5                        |                                                                                        |  |
| -56.3'                                                                                                                       |                                            |                       | (SC) Dark grey, fine clayey SAND. Some silt.                                     |                                                                                                   | 6                        |                                                                                        |  |
| -57.8'                                                                                                                       |                                            |                       | (CL) Dark olive-grey, silty, lean CLAY. Trace of fine sand.                      |                                                                                                   | 7                        |                                                                                        |  |
|                                                                                                                              | 60                                         |                       |                                                                                  |                                                                                                   | 8                        |                                                                                        |  |
| -60.8'                                                                                                                       |                                            |                       | Bottom of Boring 60.8'                                                           |                                                                                                   |                          |                                                                                        |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |                                            |                       |                                                                                  | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30". |                          |                                                                                        |  |



Hole No. SH-178

|                                                                                                                              |              |                          |                                                                                                        |                                                              |                                |                                                                                                         |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------|--|
| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                                  |  |
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL |                                |                                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X-819311 Y-774351 GA. EAST                                                           |              |                          |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or USU)<br>MLW            |                                |                                                                                                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                                |                                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and title number)<br>SH-178                                                           |              |                          |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                                | DISTURBED<br>4<br>UNDISTURBED<br>0                                                                      |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                |                                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN<br>60.2' (Water 43.0')                                                                            |              |                          |                                                                                                        | 16. DATE HOLE                                                |                                | STARTED<br>29 JAN 92<br>COMPLETED<br>29 JAN 92                                                          |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                          |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>60.2'                                                                                              |              |                          |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                                |                                                                                                         |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                      | 2. CORE<br>RECOVERY<br>e                                     | BOX OR<br>SAMPLE<br>NO.<br>VAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g                |  |
|                                                                                                                              |              |                          | Water                                                                                                  |                                                              |                                |                                                                                                         |  |
|                                                                                                                              | 40           |                          | Bottom of Harbor 43.0'                                                                                 |                                                              |                                |                                                                                                         |  |
| -43.0'                                                                                                                       |              |                          | (SC) Dark grey, fine clayey SAND.<br>Trace of wood particles & fine to<br>coarse gravel.               |                                                              | 1                              | Weight of rods drove splitspoon<br>to 43.5'. Weight of hammer<br>drove it to 45.2'.<br>0                |  |
| -45.2'                                                                                                                       | 45           |                          | No wood or gravel.                                                                                     |                                                              |                                | 46                                                                                                      |  |
|                                                                                                                              |              |                          |                                                                                                        |                                                              | 2                              | 63                                                                                                      |  |
|                                                                                                                              | 50           |                          |                                                                                                        |                                                              |                                | 74                                                                                                      |  |
|                                                                                                                              |              |                          |                                                                                                        |                                                              | 3                              | 53                                                                                                      |  |
| -52.7'                                                                                                                       | 55           |                          | (CL) Dark grey, lean CLAY. Some fine sand<br>& silt, trace of mica.                                    |                                                              |                                | 80                                                                                                      |  |
|                                                                                                                              |              |                          |                                                                                                        |                                                              | 4                              | 92                                                                                                      |  |
| -60.2'                                                                                                                       | 60           |                          | Bottom of Boring 60.2'                                                                                 |                                                              |                                | 92                                                                                                      |  |
|                                                                                                                              |              |                          | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                              |                                | BLOWS PER FOOT:<br><br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-179

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISHTAIL |                              |                                                                                          |  |
| 2. LOCATION (Coordinates or Station)<br>X=819292 Y=773811 GA. EAST                                                           |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                          |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314       |                              |                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-179                                                            |              |                            |                                                                                                  | BURDEN SAMPLES TAKEN                                         |                              | DISTURBED<br>5<br>UNDISTURBED<br>0                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                              |                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                              |                                                                                          |  |
| 7. THICKNESS OF OVERBURDEN<br>60.4' (Water 40.9')                                                                            |              |                            |                                                                                                  | 16. DATE HOLE                                                |                              | STARTED<br>29 JAN 92<br>COMPLETED<br>29 JAN 92                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                |  |
| 9. TOTAL DEPTH OF HOLE<br>60.4'                                                                                              |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                          |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g |  |
|                                                                                                                              |              |                            | Water                                                                                            |                                                              |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.0'.                    |  |
|                                                                                                                              |              |                            | Bottom of Harbor 40.9'                                                                           |                                                              |                              |                                                                                          |  |
| -40.9'                                                                                                                       | 40           |                            | (CL) Dark grey, lean CLAY. Some fine sand, silt & fine gravel.                                   |                                                              | 1                            | 18                                                                                       |  |
| -42.4'                                                                                                                       |              |                            | Silty, lean clay, trace of fine sand, no gravel.                                                 |                                                              |                              | 60                                                                                       |  |
|                                                                                                                              | 45           |                            |                                                                                                  |                                                              | 2                            | 68                                                                                       |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 54                                                                                       |  |
| -48.4'                                                                                                                       |              |                            |                                                                                                  |                                                              | 3                            | 73                                                                                       |  |
|                                                                                                                              | 50           |                            | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                                                              |                              | 80                                                                                       |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 83                                                                                       |  |
|                                                                                                                              | 55           |                            |                                                                                                  |                                                              | 4                            | 78                                                                                       |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 100/0.9                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 100/0.9                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                              |                              | 52                                                                                       |  |
| -60.4'                                                                                                                       | 60           |                            |                                                                                                  |                                                              | 5                            | 31                                                                                       |  |
|                                                                                                                              |              |                            | Bottom of Boring 60.4'                                                                           |                                                              |                              | BLOWS PER FOOT:                                                                          |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30".           |  |

|                                                                                                  |       |                         |                                                                       |                                                                                                  |                       |                                                                               |  |
|--------------------------------------------------------------------------------------------------|-------|-------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------|--|
| Hole No. SM-10U                                                                                  |       |                         |                                                                       |                                                                                                  |                       |                                                                               |  |
| DRILLING LOG                                                                                     |       | DIVISION SOUTH ATLANTIC |                                                                       | INSTALLATION SAVANNAH, GA.                                                                       |                       | SHEET 1 OF 1 SHEETS                                                           |  |
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                             |       |                         |                                                                       | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/2" fish tail                                       |                       |                                                                               |  |
| 2. LOCATION (Coordinates or Station) X-819697 Y-773405 GA. EAST                                  |       |                         |                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                   |                       |                                                                               |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                             |       |                         |                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314                                              |                       |                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-180                                   |       |                         |                                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                       |                       | 13. DISTURBED 5 UNDISTURBED 0                                                 |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                 |       |                         |                                                                       | 14. TOTAL NUMBER CORE BOXES                                                                      |                       | 0                                                                             |  |
| 6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.                             |       |                         |                                                                       | 15. ELEVATION GROUND WATER                                                                       |                       | N/A                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 60.9' (Water 42.9')                                                   |       |                         |                                                                       | 16. DATE HOLE                                                                                    |                       | 16. STARTED 5 DEC 91 COMPLETED 5 DEC 91                                       |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                  |       |                         |                                                                       | 17. ELEVATION TOP OF HOLE                                                                        |                       | 0.0'                                                                          |  |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                     |       |                         |                                                                       | 18. TOTAL CORE RECOVERY FOR BORING                                                               |                       | N/A %                                                                         |  |
|                                                                                                  |       |                         |                                                                       | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.                                                    |                       |                                                                               |  |
| ELEVATION                                                                                        | DEPTH | LEGEND                  | CLASSIFICATION OF MATERIALS (Description)                             | % CORE RECOVERY                                                                                  | BOX OR SAMPLE NO. JAR | REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) |  |
| 0+0                                                                                              | 0+    |                         |                                                                       |                                                                                                  |                       | BLOWS                                                                         |  |
|                                                                                                  |       |                         | Water                                                                 |                                                                                                  |                       | Scale change at 40.0'. Set 6" diameter casing by own weight to 43.5'.         |  |
|                                                                                                  | 40    |                         | Bottom of Harbor 42.9'                                                |                                                                                                  |                       |                                                                               |  |
| -42.9'                                                                                           |       |                         |                                                                       |                                                                                                  | 1                     | 20                                                                            |  |
|                                                                                                  | 45    |                         | (CH) Dark olive-grey, fat CLAY. Trace of silt & mica                  |                                                                                                  |                       | 33                                                                            |  |
| -47.4'                                                                                           |       |                         |                                                                       |                                                                                                  | 2                     | 33                                                                            |  |
|                                                                                                  | 50    |                         | Dark olive grey to grey, some silt.                                   |                                                                                                  |                       | 60                                                                            |  |
| -51.9'                                                                                           |       |                         |                                                                       |                                                                                                  | 3                     | 55                                                                            |  |
|                                                                                                  | 55    |                         | (CL) Dark olive grey, silty lean CLAY. Trace of fine sand & mica.     |                                                                                                  |                       | 60                                                                            |  |
| -56.4'                                                                                           |       |                         |                                                                       |                                                                                                  | 4                     | 90                                                                            |  |
|                                                                                                  | 60    |                         | (CH) Dark olive-grey, fat CLAY. Some silt, trace of fine sand & mica. |                                                                                                  |                       | 70                                                                            |  |
| -60.9'                                                                                           |       |                         |                                                                       |                                                                                                  | 5                     | 86                                                                            |  |
|                                                                                                  |       |                         | Bottom of Boring 60.9'                                                |                                                                                                  |                       | 96                                                                            |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |       |                         |                                                                       | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |                       |                                                                               |  |

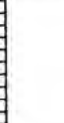
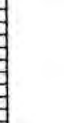
hole no. SM-101

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                  |                   | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4"spitspoon, 5 1/2" Fishtail                   |                   |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-819823 Y-772822 GA. EAST                                                           |       |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                   |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                         |                   |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-181                                                            |       |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 5<br>UNDISTURBED : 0 |                   |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                   |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                              |                   |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>60.1' (Water 42.1')                                                                            |       |                            |                                                                                                  | 16. DATE HOLE<br>STARTED : 3 FEB 92<br>COMPLETED : 3 FEB 92                    |                   |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                   |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |       |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                   |                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                   |                                                                                                  |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY                                                                | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. if significant)                 |  |
| 0.0'                                                                                                                         | 0     | *                          |                                                                                                  |                                                                                | JAR               | BLOWS                                                                                            |  |
|                                                                                                                              |       |                            | Water                                                                                            |                                                                                |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 43.1'.                         |  |
| -42.1'                                                                                                                       | 40    |                            | Bottom of Harbor 42.1'                                                                           |                                                                                |                   |                                                                                                  |  |
|                                                                                                                              |       |                            | (CL) Dark grey, silty, lean CLAY.<br>Trace of fine sand.                                         |                                                                                | 1                 | 2                                                                                                |  |
|                                                                                                                              | 45    |                            |                                                                                                  |                                                                                |                   | Weight of rods drove spitspoon from 42.1' to 43.2'.                                              |  |
| -46.6'                                                                                                                       |       |                            |                                                                                                  |                                                                                | 2                 | 16                                                                                               |  |
|                                                                                                                              |       |                            | Lean clay, some silt & fine sand.                                                                |                                                                                |                   | 22                                                                                               |  |
|                                                                                                                              | 50    |                            |                                                                                                  |                                                                                |                   | 36                                                                                               |  |
| -51.1'                                                                                                                       |       |                            |                                                                                                  |                                                                                | 3                 | 54                                                                                               |  |
|                                                                                                                              |       |                            | (SC) Dark grey, fine clayey SAND.<br>Some silt.                                                  |                                                                                |                   | 44                                                                                               |  |
|                                                                                                                              | 55    |                            |                                                                                                  |                                                                                |                   | 66                                                                                               |  |
|                                                                                                                              |       |                            |                                                                                                  |                                                                                | 4                 | 50                                                                                               |  |
|                                                                                                                              | 60    |                            |                                                                                                  |                                                                                |                   | 48                                                                                               |  |
| -60.1'                                                                                                                       |       |                            |                                                                                                  |                                                                                | 5                 | 56                                                                                               |  |
|                                                                                                                              |       |                            |                                                                                                  |                                                                                |                   | 56                                                                                               |  |
|                                                                                                                              | 30    |                            | Bottom of Boring 60.1'                                                                           |                                                                                |                   | 62                                                                                               |  |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. spitspoon w/ 140 lb. hammer falling 30". |  |

Hole No. SM-102

| DRILLING LOG                                                                                                                 |             | VISION<br>SOUTH ATLANTIC |                                                           | INSTALLATION<br>SAVANNAH, GA.                                                                     |                                | SHEET 1<br>OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                          |                                                           | 10. SIZE AND TYPE OF BIT<br>1 1/4" split spoon, 5/8" fishtail                                     |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-820234 Y-772555 GA. EAST                                                           |             |                          |                                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                          |                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                            |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-182                                                            |             |                          |                                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                        |                                | 13. DISTURBED : 5<br>UNDISTURBED : 0                                                      |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                          |                                                           | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                                |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                          |                                                           | 15. ELEVATION GROUND WATER<br>N/A                                                                 |                                |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>59.8' (Water 44.8')                                                                            |             |                          |                                                           | 16. DATE HOLE                                                                                     |                                | 16. STARTED : 5 DEC 91<br>COMPLETED : 5 DEC 91                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                          |                                                           | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                                |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>59.8'                                                                                              |             |                          |                                                           | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                                                       |                                |                                                                                           |  |
|                                                                                                                              |             |                          |                                                           | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                                |                                                                                           |  |
| ELEVATION<br>Q.0                                                                                                             | DEPTH<br>0. | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d         | % CORE<br>RECOVERY<br>e                                                                           | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f |  |
|                                                                                                                              |             |                          | Water                                                     |                                                                                                   |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.8'.                     |  |
|                                                                                                                              | 40          |                          | Bottom of Harbor 44.8'                                    |                                                                                                   |                                |                                                                                           |  |
| -44.8'                                                                                                                       | 45          |                          | (CH) Dark olive-grey, fat CLAY. Trace of silt & mica.     |                                                                                                   | 1                              | 25                                                                                        |  |
|                                                                                                                              |             |                          |                                                           |                                                                                                   |                                | 51                                                                                        |  |
| -49.3'                                                                                                                       | 50          |                          | Some silt.                                                |                                                                                                   | 2                              | 68                                                                                        |  |
|                                                                                                                              |             |                          |                                                           |                                                                                                   |                                | 52                                                                                        |  |
| -53.8'                                                                                                                       |             |                          | (CL) Dark olive grey, silty lean CLAY. Trace of mica.     |                                                                                                   | 3                              | 52                                                                                        |  |
| -52.3'                                                                                                                       |             |                          | Trace of fine sand.                                       |                                                                                                   |                                | 39                                                                                        |  |
| -55.3'                                                                                                                       | 55          |                          | (CH) Dark olive-grey, fat CLAY. Some silt, trace of mica. |                                                                                                   | 4                              | 35                                                                                        |  |
|                                                                                                                              |             |                          |                                                           |                                                                                                   |                                | 46                                                                                        |  |
| -59.8'                                                                                                                       | 60          |                          | Bottom of Boring 59.8'                                    |                                                                                                   | 5                              | 44                                                                                        |  |
|                                                                                                                              |             |                          |                                                           |                                                                                                   |                                | 45                                                                                        |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |             |                          |                                                           | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |                                |                                                                                           |  |

Hole No. SH-183

| DRILLING LOG                                                                                                                 |               | DIVISION<br>SOUTH ATLANTIC                                                          | INSTALLATION<br>SAVANNAH, GA.                                                                    |                      | SHEET 1<br>OF 1 SHEETS |                                                                                                  |            |
|------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------|------------------------|--------------------------------------------------------------------------------------------------|------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                                                                                     | 10. SIZE AND TYPE OF BIT<br>1 1/2" splitspoon, 51/2" Fishtail                                    |                      |                        |                                                                                                  |            |
| 2. LOCATION (Coordinates or Station)<br>X=820368 Y=772006 GA. EAST                                                           |               |                                                                                     | 11. DATUM FOR ELEVATION SHOWN (TBW or MSL)<br>MLW                                                |                      |                        |                                                                                                  |            |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                                            |                      |                        |                                                                                                  |            |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-183                                                            |               |                                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 5 UNDISTURBED 0                          |                      |                        |                                                                                                  |            |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                                                                                     | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                      |                        |                                                                                                  |            |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                                                                                     | 15. ELEVATION GROUND WATER<br>N/A                                                                |                      |                        |                                                                                                  |            |
| 7. THICKNESS OF OVERBURDEN<br>59.5' (Water 41.5')                                                                            |               |                                                                                     | 16. DATE HOLE<br>STARTED 3 FEB 92 COMPLETED 3 FEB 92                                             |                      |                        |                                                                                                  |            |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |               |                                                                                     | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                      |                        |                                                                                                  |            |
| 9. TOTAL DEPTH OF HOLE<br>59.5'                                                                                              |               |                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                      |                        |                                                                                                  |            |
|                                                                                                                              |               |                                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                      |                        |                                                                                                  |            |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>c                                                                         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE RECOVERY<br>e | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g           | BLOWS<br>h |
| -41.5'                                                                                                                       | 40            |    | Water                                                                                            |                      |                        | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 41.6'.                         |            |
|                                                                                                                              |               |                                                                                     | Bottom of Harbor 41.5'                                                                           |                      |                        |                                                                                                  |            |
| -59.5'                                                                                                                       | 45            |   | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                      | 1                      |                                                                                                  | 38         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 35         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 48         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      | 2                      |                                                                                                  | 36         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 35         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 34         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      | 3                      |                                                                                                  | 33         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 35         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 43         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  | 39         |
| 60                                                                                                                           | 50            |  |                                                                                                  |                      | 4                      |                                                                                                  | 42         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  |            |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      | 5                      |                                                                                                  | 41         |
|                                                                                                                              |               |                                                                                     |                                                                                                  |                      |                        |                                                                                                  |            |
| 30                                                                                                                           | 60            |  | Bottom of Boring 59.5'                                                                           |                      |                        | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |            |
|                                                                                                                              |               |                                                                                     | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                      |                        |                                                                                                  |            |

Hole No SH-184

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                            |                                | SHEET 1<br>OF 1 SHEETS                                                                          |    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------|----|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" spitspoon, 5/12" Fishell |                                |                                                                                                 |    |  |
| 2. LOCATION (Coordinates or Station)<br>X=820813 Y=771614 GA. EAST                                                           |             |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW        |                                |                                                                                                 |    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314   |                                |                                                                                                 |    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-184                                                            |             |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN               |                                | DISTURBED : UNDISTURBED :<br>6 : 0                                                              |    |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                            |                                |                                                                                                 |    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                           |                                |                                                                                                 |    |  |
| 7. THICKNESS OF OVERBURDEN 60.9' (Water 42.9')                                                                               |             |                            |                                                                                                  | 16. DATE HOLE                                            |                                | STARTED : COMPLETED :<br>30 JAN 92 : 30 JAN 92                                                  |    |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                           |                                |                                                                                                 |    |  |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                                                 |             |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A %                 |                                |                                                                                                 |    |  |
|                                                                                                                              |             |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.         |                                |                                                                                                 |    |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>s                | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                                | % CORE<br>RECOVER-<br>ERY                                | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>s       |    |  |
|                                                                                                                              |             |                            | Water                                                                                            |                                                          |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 43.0'.                     |    |  |
|                                                                                                                              | 40          |                            | Bottom of Harbor 42.9'                                                                           |                                                          |                                |                                                                                                 |    |  |
| -42.9'                                                                                                                       | 45          |                            | (CL) Dark grey, lean CLAY. Some silt & fine sand, trace of mica.                                 |                                                          | 1                              | 33                                                                                              |    |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                          |                                |                                                                                                 | 41 |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                          |                                |                                                                                                 | 34 |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                          |                                | 2                                                                                               | 33 |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                          |                                |                                                                                                 | 47 |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                          |                                |                                                                                                 | 91 |  |
| -51.9'                                                                                                                       | 50          |                            | (SC) Dark grey, fine clayey SAND. Some silt, trace of mica.                                      |                                                          | 3                              | 60                                                                                              |    |  |
| -54.9'                                                                                                                       | 55          |                            | (CL) Dark grey, lean CLAY. Some fine sand.                                                       |                                                          | 4                              | 65                                                                                              |    |  |
| -57.9'                                                                                                                       | 60          |                            | (SC) Dark grey, fine clayey SAND. Trace of silt.                                                 |                                                          | 5                              | 60                                                                                              |    |  |
| -60.9'                                                                                                                       | 60          |                            | Olive-grey.                                                                                      |                                                          | 6                              | 46                                                                                              |    |  |
|                                                                                                                              |             |                            | Bottom of Boring 60.9'                                                                           |                                                          |                                | 50                                                                                              |    |  |
|                                                                                                                              | 30          |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                          |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spitspoon w/140 lb. hammer falling 30". |    |  |

Hole No. SH-185

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                       |                                | SHEET 1<br>OF 1 SHEETS                                                              |       |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                   | 10. SIZE AND TYPE OF BIT<br>1 1/4" splitspoon, 5 1/2" fishtail                                      |                                |                                                                                     |       |
| 2. LOCATION (Coordinates or Station)<br>X-821329 Y-770794 GA. EAST                                                           |              |                            |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                   |                                |                                                                                     |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                                               |                                |                                                                                     |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-185                                                            |              |                            |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 5<br>UNDISTURBED : 0                      |                                |                                                                                     |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                    |                                |                                                                                     |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                   | 15. ELEVATION GROUND WATER N/A                                                                      |                                |                                                                                     |       |
| 7. THICKNESS OF OVERBURDEN<br>60.3' (Water 43.8')                                                                            |              |                            |                                                   | 16. DATE MOLE<br>STARTED : 24 JAN 92<br>COMPLETED : 24 JAN 92                                       |                                |                                                                                     |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                            |                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                   |                                |                                                                                     |       |
| 9. TOTAL DEPTH OF HOLE 60.3'                                                                                                 |              |                            |                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                           |                                |                                                                                     |       |
|                                                                                                                              |              |                            |                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                    |                                |                                                                                     |       |
| ELEVATION<br>0=0'                                                                                                            | DEPTH<br>0 = | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a | % CORE<br>RECOV-<br>ERY                                                                             | BOX OR<br>SAMPLE<br>NO.<br>JNR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant) | BLOWS |
|                                                                                                                              |              |                            | Water                                             |                                                                                                     |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 44.2'.         |       |
|                                                                                                                              | 40           |                            | Bottom of Harbor 43.8'                            |                                                                                                     |                                |                                                                                     |       |
|                                                                                                                              | 45           |                            | (SM) Olive-grey, fine silty SAND. Some clay.      |                                                                                                     | 1                              |                                                                                     | 30    |
|                                                                                                                              | 46.8'        |                            | (SC) Olive-grey, fine clayey SAND. Some silt.     |                                                                                                     | 2                              |                                                                                     | 54    |
|                                                                                                                              | 48.3'        |                            | Olive-grey to grey, trace of mica.                |                                                                                                     |                                |                                                                                     | 44    |
|                                                                                                                              | 50           |                            |                                                   |                                                                                                     | 3                              |                                                                                     | 49    |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                     |                                |                                                                                     | 36    |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                     | 4                              |                                                                                     | 36    |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                     |                                |                                                                                     | 47    |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                     | 5                              |                                                                                     | 45    |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                     |                                |                                                                                     | 46    |
|                                                                                                                              | 55           |                            |                                                   |                                                                                                     |                                |                                                                                     | 40    |
|                                                                                                                              | 60           |                            | Bottom of Boring 60.3'                            |                                                                                                     |                                |                                                                                     | 37    |
|                                                                                                                              | 60.3'        |                            |                                                   |                                                                                                     |                                |                                                                                     |       |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                            |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D.<br>splitspoon w/140 lb. hammer falling 30". |                                |                                                                                     |       |



MOLE NO. 307-100

|                                                                                                                              |            |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------|--|
| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>VANNAH, GA.                               |                                | SHEET 1<br>OF 1 SHEETS                                                                                           |  |
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/2" fishtail |                                |                                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-822019 Y-770017 GA. EAST                                                           |            |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314    |                                |                                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-186                                                            |            |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | DISTURBED<br>7<br>UNDISTURBED<br>0                                                                               |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                          |                                |                                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                  | 15. ELEVATION GROUND WATER N/A                            |                                |                                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 60.8' (Water 37.7')                                                                               |            |                          |                                                                                                  | 16. DATE HOLE                                             |                                | STARTED<br>10 JAN 92<br>COMPLETED<br>10 JAN 92                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                            |                                |                                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 60.8'                                                                                                 |            |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                                |                                                                                                                  |  |
|                                                                                                                              |            |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                |                                                                                                                  |  |
| ELEVATION<br>0+0'                                                                                                            | DEPTH<br>0 | LEGEND<br>=              | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE<br>RECOV-<br>ERY                                   | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g                         |  |
|                                                                                                                              |            |                          | Water                                                                                            |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              | 35         |                          | Bottom of Harbor 37.7'                                                                           |                                                           |                                |                                                                                                                  |  |
| -37.7'                                                                                                                       |            |                          | (Mf) Dark grey to black, clayey SILT.                                                            |                                                           | 1                              | Weight of rods drove splitspoon from 37.7' to 44.3'. Jar 2 taken from material change at approx. 44.0' to 44.3'. |  |
|                                                                                                                              | 40         |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
| -44.0'                                                                                                                       |            |                          | (Ch) Dark olive-grey, fat CLAY.                                                                  |                                                           | 2                              |                                                                                                                  |  |
| -44.3'                                                                                                                       |            |                          | (SM) Olive-grey, fine, silty SAND. Some clay.                                                    |                                                           | 3                              |                                                                                                                  |  |
|                                                                                                                              | 45         |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              |            |                          | (SC) Dark grey, fine clayey SAND. Some silt.                                                     |                                                           | 4                              |                                                                                                                  |  |
| -48.8'                                                                                                                       |            |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              | 50         |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              |            |                          | (CL) Dark grey, silty, lean CLAY. Some fine sand, trace of mica.                                 |                                                           | 5                              |                                                                                                                  |  |
| -54.8'                                                                                                                       |            |                          | Trace of fine sand.                                                                              |                                                           | 6                              |                                                                                                                  |  |
|                                                                                                                              | 55         |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              |            |                          |                                                                                                  |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              | 60         |                          |                                                                                                  |                                                           | 7                              |                                                                                                                  |  |
| -60.8'                                                                                                                       |            |                          | Bottom of Boring 60.8'                                                                           |                                                           |                                |                                                                                                                  |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".                 |  |

Hole No. SM-107

| DRILLING LOG                                                                                                                 |               | DIVISION<br>SOUTH ATLANTIC |                                                           | INSTALLATION<br>SAVANNAH, GA.                                                                    |                              | SHEET 1<br>Of 1 SHEETS                                                                    |            |
|------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                            |                                                           | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISHTAIL                                     |                              |                                                                                           |            |
| 2. LOCATION (Coordinates or Station)<br>X=822920 Y=768856 GA. EAST                                                           |               |                            |                                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                              |                                                                                           |            |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                            |                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                              |                                                                                           |            |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-187                                                            |               |                            |                                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 7<br>UNDISTURBED : 0                   |                              |                                                                                           |            |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                            |                                                           | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                              |                                                                                           |            |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                            |                                                           | 15. ELEVATION GROUND WATER<br>N/A                                                                |                              |                                                                                           |            |
| 7. THICKNESS OF OVERBURDEN<br>60.1' (Water 36.1')                                                                            |               |                            |                                                           | 16. DATE HOLE<br>STARTED : 19 NOV 91<br>COMPLETED : 19 NOV 91                                    |                              |                                                                                           |            |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |               |                            |                                                           | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                              |                                                                                           |            |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |               |                            |                                                           | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                              |                                                                                           |            |
|                                                                                                                              |               |                            |                                                           | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                              |                                                                                           |            |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d         | % CORE<br>RECOV-<br>ERY<br>e                                                                     | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g | BLOWS<br>h |
| -36.1'                                                                                                                       | 35            |                            | Water<br>Bottom of Harbor 36.1'                           |                                                                                                  |                              | Scale change at 35.0'. Set 6" diameter casing by own weight to 41.5'.                     |            |
| -41.1'                                                                                                                       | 40            |                            | (MH) Dark grey to black, clayey SILT.<br>Very wet & soft. |                                                                                                  | 1                            | Weight of rods drove splitspoon from 36.1' to 41.1'.                                      | 0          |
| -43.6'                                                                                                                       | 45            |                            | (SM) Olive-grey, fine, silty SAND.<br>Trace of clay.      |                                                                                                  | 2                            | Added hammer and drove from 41.1' to 42.1' with 12 blows.                                 | 12         |
| -48.1'                                                                                                                       | 50            |                            | (SC) Greenish-grey, fine clayey SAND.<br>Some silt.       |                                                                                                  | 3                            |                                                                                           | 22         |
| -51.1'                                                                                                                       | 55            |                            | (CH) Greenish-grey, fat CLAY.<br>Trace of fine sand.      |                                                                                                  | 4                            |                                                                                           | 35         |
|                                                                                                                              |               |                            | Some fine sand.                                           |                                                                                                  | 5                            |                                                                                           | 32         |
|                                                                                                                              |               |                            |                                                           |                                                                                                  | 6                            |                                                                                           | 68         |
|                                                                                                                              |               |                            |                                                           |                                                                                                  | 7                            |                                                                                           | 100/0 9    |
| -60.1'                                                                                                                       | 60            |                            | Bottom of Boring 60.1'                                    |                                                                                                  |                              |                                                                                           | 24         |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |               |                            |                                                           | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30"; |                              |                                                                                           |            |

Hole No. SH-100

| DRILLING LOG                                                                                                                 |             | VISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                             |                                | SHEET 1<br>OF 1 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                          |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/2" fishtail |                                |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X=823361 Y=768567 GA. EAST                                                           |             |                          |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or WSL)<br>MLW         |                                |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                          |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314    |                                |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-188                                                            |             |                          |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | DISTURBED : 5<br>UNDISTURBED : 0                                                                    |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                          |                                                                                                        | 14. TOTAL NUMBER CORE BOXES                               |                                | 0                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                          |                                                                                                        | 15. ELEVATION GROUND WATER                                |                                | N/A                                                                                                 |  |
| 7. THICKNESS OF OVERBURDEN 50.0' (Water 41.0')                                                                               |             |                          |                                                                                                        | 16. DATE HOLE                                             |                                | STARTED : 15 JAN 92<br>COMPLETED : 15 JAN 92                                                        |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                          |                                                                                                        | 17. ELEVATION TOP OF HOLE                                 |                                | 0.0'                                                                                                |  |
| 9. TOTAL DEPTH OF HOLE 50.0'                                                                                                 |             |                          |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING                        |                                | N/A                                                                                                 |  |
|                                                                                                                              |             |                          |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                |                                                                                                     |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOVERY                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g            |  |
|                                                                                                                              |             |                          | Water                                                                                                  |                                                           |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 42.3'.                         |  |
|                                                                                                                              |             |                          | Bottom of Harbor 41.0'                                                                                 |                                                           |                                |                                                                                                     |  |
| -41.0'                                                                                                                       |             |                          | (SM) Dark grey to black, coarse silty SAND.<br>Some clay.                                              |                                                           | 1                              |                                                                                                     |  |
| -42.2'                                                                                                                       |             |                          | (SC) Olive, fine clayey SAND. Some silt.                                                               |                                                           | 2                              |                                                                                                     |  |
|                                                                                                                              |             |                          |                                                                                                        |                                                           | 3                              | Weight of rods drove splitspoon<br>to 42.3'.                                                        |  |
|                                                                                                                              |             |                          |                                                                                                        |                                                           |                                |                                                                                                     |  |
|                                                                                                                              |             |                          |                                                                                                        |                                                           | 4                              |                                                                                                     |  |
|                                                                                                                              |             |                          |                                                                                                        |                                                           |                                |                                                                                                     |  |
|                                                                                                                              |             |                          |                                                                                                        |                                                           | 5                              |                                                                                                     |  |
| -50.0'                                                                                                                       | 50          |                          | Bottom of Boring 50.0'                                                                                 |                                                           |                                |                                                                                                     |  |
|                                                                                                                              |             |                          | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                           |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30". |  |

HOLE NO. 37-109

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                      | INSTALLATION<br>SAVANNAH, GA.                                                                   |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                    |       |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                      | 10. SIZE AND TYPE OF BIT<br>1 1/2" spitspoon, 5/2" fishtail                                     |                                |                                                                                                                                                                                                                           |       |
| 2. LOCATION (Coordinates or Station)<br>X=823634 Y=768168 GA. EAST                                                           |            |                            |                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                               |                                |                                                                                                                                                                                                                           |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                                           |                                |                                                                                                                                                                                                                           |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-189                                                            |            |                            |                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 5<br>UNDISTURBED: 0                    |                                |                                                                                                                                                                                                                           |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                      | 14. TOTAL NUMBER CORE BOXES<br>0                                                                |                                |                                                                                                                                                                                                                           |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                      | 15. ELEVATION GROUND WATER N/A                                                                  |                                |                                                                                                                                                                                                                           |       |
| 7. THICKNESS OF OVERBURDEN<br>61.3' (Water 43.3')                                                                            |            |                            |                                                      | 16. DATE HOLE<br>STARTED: 22 JAN 92<br>COMPLETED: 22 JAN 92                                     |                                |                                                                                                                                                                                                                           |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                      | 17. ELEVATION TOP OF HOLE<br>0.0'                                                               |                                |                                                                                                                                                                                                                           |       |
| 9. TOTAL DEPTH OF HOLE 61.3'                                                                                                 |            |                            |                                                      | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                          |                                |                                                                                                                                                                                                                           |       |
|                                                                                                                              |            |                            |                                                      | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                |                                |                                                                                                                                                                                                                           |       |
| ELEVATION<br>0+0'                                                                                                            | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d    | % CORE<br>RECOV-<br>ERY                                                                         | BOX OR<br>SAMPLE<br>NO.<br>JNR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                                 | BLOWS |
|                                                                                                                              |            |                            | Water                                                |                                                                                                 |                                | Scale change at 40.0'.<br>Set 5" diameter casing by own weight to 43.7'.                                                                                                                                                  |       |
|                                                                                                                              | 40         |                            | Bottom of Harbor 43.3'                               |                                                                                                 |                                |                                                                                                                                                                                                                           |       |
| -43.3'                                                                                                                       | 45         |                            | (SM) Olive-grey, fine silty SAND. Some clay.         |                                                                                                 | 1                              | Set spitspoon to 43.8' under own weight.                                                                                                                                                                                  | 13    |
| -46.3'                                                                                                                       |            |                            | Trace of large grained gravel, single grained.       |                                                                                                 | 2                              | No sample recovered from 46.3' to 47.8' on first attempt. Cont'd. without cleanout to 49.3'. Single large grain gravel 1" in diameter was recovered in this drive at 46.5'. Gravel was likely cause of the missed sample. | 52    |
| -47.8'                                                                                                                       |            |                            |                                                      |                                                                                                 |                                |                                                                                                                                                                                                                           | 37    |
| -50.8'                                                                                                                       | 50         |                            | (CH) Dark olive-grey fat CLAY. Some silt. Some sand. |                                                                                                 | 3                              |                                                                                                                                                                                                                           | 58    |
|                                                                                                                              | 50         |                            |                                                      |                                                                                                 | 4                              |                                                                                                                                                                                                                           | 29    |
|                                                                                                                              |            |                            |                                                      |                                                                                                 | 5                              |                                                                                                                                                                                                                           | 44    |
|                                                                                                                              | 60         |                            |                                                      |                                                                                                 |                                |                                                                                                                                                                                                                           | 46    |
|                                                                                                                              |            |                            |                                                      |                                                                                                 |                                |                                                                                                                                                                                                                           | 69    |
|                                                                                                                              |            |                            |                                                      |                                                                                                 |                                |                                                                                                                                                                                                                           | 63    |
|                                                                                                                              |            |                            |                                                      |                                                                                                 |                                |                                                                                                                                                                                                                           | 40    |
| -61.3'                                                                                                                       |            |                            |                                                      |                                                                                                 |                                |                                                                                                                                                                                                                           | 27    |
|                                                                                                                              |            |                            | Bottom of Boring 61.3'                               |                                                                                                 |                                |                                                                                                                                                                                                                           | 37    |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |            |                            |                                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spitspoon w/140 lb. hammer falling 30". |                                |                                                                                                                                                                                                                           |       |

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>AVANNAH, GA.                              |                                | SHEET 1<br>OF 1 SHEETS                                                                    |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/8" fishtail |                                |                                                                                           |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>X=823776 Y=767656 GA. EAST                                                           |             |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                           |                                                                                                     |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314    |                                |                                                                                           |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-190                                                            |             |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | DISTURBED 6<br>UNDISTURBED 0                                                              |                                                                                                     |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES                               |                                | 0                                                                                         |                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                        | 15. ELEVATION GROUND WATER N/A                            |                                |                                                                                           |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN 50.3' (Water 39.4')                                                                               |             |                            |                                                                                                        | 16. DATE HOLE STARTED 15 JAN 92 COMPLETED 15 JAN 92       |                                |                                                                                           |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                            |                                |                                                                                           |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE 50.3'                                                                                                 |             |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A %                  |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |             |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                |                                                                                           |                                                                                                     |
| ELEVATION<br>0±0'                                                                                                            | DEPTH<br>0± | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>g                                                      | % CORE<br>RECOVERY                                        | BOX OR<br>SAMPLE<br>NO.<br>JAN | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>h |                                                                                                     |
|                                                                                                                              |             |                            | Water                                                                                                  |                                                           |                                |                                                                                           | Scale change at 35.0'.<br>Set 6" diameter casing by own<br>weight to 42.0'.                         |
|                                                                                                                              | 35          |                            |                                                                                                        |                                                           |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |             |                            | Bottom of Harbor 39.4'                                                                                 |                                                           |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | -39.4'      |                            | (UH) Very dark grey, clayey SILT.                                                                      |                                                           | 1                              |                                                                                           | Jar sample 2 taken at change of<br>material from approx. 42.5' to<br>42.8'. 0                       |
|                                                                                                                              | -42.5'      |                            | (SC) Olive, fine clayey SAND. Trace<br>of wood particles.                                              |                                                           | 2                              |                                                                                           | Weight of rods drove splitspoon<br>from 39.4' to 42.8'. 16                                          |
|                                                                                                                              | -42.8'      |                            |                                                                                                        |                                                           | 3                              |                                                                                           |                                                                                                     |
|                                                                                                                              | 45          |                            | Some silt, no wood particles.                                                                          |                                                           |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | -45.8'      |                            |                                                                                                        |                                                           | 4                              |                                                                                           |                                                                                                     |
|                                                                                                                              | -47.3'      |                            | (SM) Olive, fine silty SAND. Some clay.                                                                |                                                           |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |             |                            |                                                                                                        |                                                           | 5                              |                                                                                           |                                                                                                     |
|                                                                                                                              | -50.3'      |                            | (SC) Olive, fine clayey SAND. Some silt.                                                               |                                                           | 6                              |                                                                                           |                                                                                                     |
|                                                                                                                              | 50          |                            |                                                                                                        |                                                           |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |             |                            | Bottom of Boring 50.3'                                                                                 |                                                           |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                           |                                |                                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30". |

MOB NO. 37-191

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                 |                                | SHEET 1<br>OF 1 SHEETS                                                                   |                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 3/8" spitspoon, 5 1/2" fishtail |                                |                                                                                          |                                                                                                    |
| 2. LOCATION (Coordinates or Station)<br>X-824153 Y-767289 GA. EAST                                                           |             |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW             |                                |                                                                                          |                                                                                                    |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314        |                                |                                                                                          |                                                                                                    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-191                                                            |             |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>7               |                                | DISTURBED<br>0                                                                           |                                                                                                    |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                              |                                | UNDISTURBED<br>0                                                                         |                                                                                                    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                             |                                | 16. DATE HOLE<br>STARTED 22 JAN 92<br>COMPLETED 22 JAN 92                                |                                                                                                    |
| 7. THICKNESS OF OVERBURDEN<br>61.1' (Water 41.6')                                                                            |             |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                             |                                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                |                                                                                                    |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |                                |                                                                                          |                                                                                                    |
| 9. TOTAL DEPTH OF HOLE<br>61.1'                                                                                              |             |                            |                                                                                                        |                                                               |                                |                                                                                          |                                                                                                    |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0= | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOVER-<br>ERY                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>e |                                                                                                    |
|                                                                                                                              |             |                            | Water                                                                                                  |                                                               |                                |                                                                                          |                                                                                                    |
|                                                                                                                              | 40          |                            | Bottom of Harbor 41.6'                                                                                 |                                                               |                                |                                                                                          | Scale change at 40.0'.<br>Set 6" diameter casing by own weight<br>to 41.7'.                        |
|                                                                                                                              | 45          |                            | (SM) Olive-grey, fine grained silty SAND.<br>Some clay.                                                |                                                               | 1                              |                                                                                          | 46                                                                                                 |
|                                                                                                                              |             |                            |                                                                                                        |                                                               |                                |                                                                                          | 38                                                                                                 |
|                                                                                                                              |             |                            |                                                                                                        |                                                               | 2                              |                                                                                          | 26                                                                                                 |
|                                                                                                                              |             |                            |                                                                                                        |                                                               |                                |                                                                                          | 31                                                                                                 |
|                                                                                                                              | 47.6'       |                            | (SC) Olive-grey, fine grained<br>clayey SAND. Some silt.                                               |                                                               | 3                              |                                                                                          | 38                                                                                                 |
|                                                                                                                              | 49.1'       |                            | Dark olive-grey.                                                                                       |                                                               |                                |                                                                                          | 52                                                                                                 |
|                                                                                                                              | 50          |                            |                                                                                                        |                                                               |                                |                                                                                          | 68                                                                                                 |
|                                                                                                                              | 51.1'       |                            | (CH) Dark olive-grey, fat CLAY. Some silt.<br>Some sand.                                               |                                                               | 4                              |                                                                                          | 66                                                                                                 |
|                                                                                                                              |             |                            |                                                                                                        |                                                               |                                |                                                                                          | 43                                                                                                 |
|                                                                                                                              | 53.6'       |                            |                                                                                                        |                                                               | 5                              |                                                                                          | 69                                                                                                 |
|                                                                                                                              | 55          |                            | (SC) Olive to dark olive-grey, fine clayey<br>SAND. Some silt.                                         |                                                               |                                |                                                                                          | 75                                                                                                 |
|                                                                                                                              |             |                            |                                                                                                        |                                                               | 6                              |                                                                                          | 54                                                                                                 |
|                                                                                                                              | 60          |                            |                                                                                                        |                                                               | 7                              |                                                                                          | 48                                                                                                 |
|                                                                                                                              |             |                            |                                                                                                        |                                                               |                                |                                                                                          |                                                                                                    |
|                                                                                                                              | 61.1'       |                            | Bottom of Boring 61.1'                                                                                 |                                                               |                                |                                                                                          |                                                                                                    |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                               |                                |                                                                                          | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D.<br>spitspoon w/140 lb. hammer falling 30". |

FIGURE 190. 011 101

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                                  |                                | SHEET 1<br>OF 1 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5/8" final                        |                                |                                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>X=824153 Y=767289 GA. EAST                                                           |            |                          |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBW or NSL)<br>MLW                              |                                |                                                                                                       |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                         |                                |                                                                                                       |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-191                                                            |            |                          |                                                                                                        | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN :DISTURBED :UNDISTURBED<br>7 :0 |                                |                                                                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                        | 14. TOTAL NUMBER CORE BOXES 0                                                  |                                |                                                                                                       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                        | 15. ELEVATION GROUND WATER N/A                                                 |                                |                                                                                                       |  |
| 7. THICKNESS OF OVERBURDEN 61.1' (Water 41.6')                                                                               |            |                          |                                                                                                        | 16. DATE HOLE :STARTED :COMPLETED<br>22 JAN 92 22 JAN 92                       |                                |                                                                                                       |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                          |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                                                 |                                |                                                                                                       |  |
| 9. TOTAL DEPTH OF HOLE 61.1'                                                                                                 |            |                          |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                       |                                |                                                                                                       |  |
|                                                                                                                              |            |                          |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                |                                                                                                       |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOV-<br>ERY                                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e BLOWS       |  |
|                                                                                                                              |            |                          | Water                                                                                                  |                                                                                |                                | Scale change at 40.0'.<br>Set 5" diameter casing by own weight<br>to 41.7'.                           |  |
| -40                                                                                                                          |            |                          | Bottom of Harbor 41.6'                                                                                 |                                                                                |                                |                                                                                                       |  |
| -41.6'                                                                                                                       |            |                          | (SM) Olive-grey, fine grained silty SAND.<br>Some clay.                                                |                                                                                | 1                              | 46                                                                                                    |  |
|                                                                                                                              |            |                          |                                                                                                        |                                                                                |                                | 38                                                                                                    |  |
| -45                                                                                                                          |            |                          |                                                                                                        |                                                                                |                                | 26                                                                                                    |  |
| -47.6'                                                                                                                       |            |                          | (SC) Olive-grey, fine grained<br>clayey SAND. Some silt.                                               |                                                                                | 2                              | 31                                                                                                    |  |
| -49.1'                                                                                                                       |            |                          | Dark olive-grey.                                                                                       |                                                                                | 3                              | 38                                                                                                    |  |
| -50                                                                                                                          |            |                          |                                                                                                        |                                                                                |                                | 52                                                                                                    |  |
| -51.1'                                                                                                                       |            |                          | (CH) Dark olive-grey, fat CLAY. Some silt.<br>Some sand.                                               |                                                                                | 4                              | 68                                                                                                    |  |
| -53.6'                                                                                                                       |            |                          |                                                                                                        |                                                                                |                                | 66                                                                                                    |  |
| -55                                                                                                                          |            |                          | (SC) Olive to dark olive-grey, fine clayey<br>SAND. Some silt.                                         |                                                                                | 5                              | 43                                                                                                    |  |
|                                                                                                                              |            |                          |                                                                                                        |                                                                                |                                | 69                                                                                                    |  |
|                                                                                                                              |            |                          |                                                                                                        |                                                                                |                                | 75                                                                                                    |  |
| -60                                                                                                                          |            |                          |                                                                                                        |                                                                                | 6                              | 54                                                                                                    |  |
|                                                                                                                              |            |                          |                                                                                                        |                                                                                |                                | 48                                                                                                    |  |
| -61.1'                                                                                                                       |            |                          | Bottom of Boring 61.1'                                                                                 |                                                                                | 7                              |                                                                                                       |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                                |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D.<br>split spoon w/ 140 lb. hammer falling 30". |  |

FD-100 (11-72)

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC                                            |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                               |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                                                                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" spoilspoon, 5 1/2" fishtail |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-824479 Y-766986 GA. EAST                                                           |              |                                                                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (FBW or MSL)<br>MLW           |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                                                                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314      |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-192                                                            |              |                                                                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                                | DISTURBED<br>5<br>UNDISTURBED<br>0                                                               |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                                                                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                            |                                |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                                                                       |                                                                                                  | 15. ELEVATION GROUND WATER N/A                              |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 60.4' (Water 43.9')                                                                               |              |                                                                       |                                                                                                  | 16. DATE HOLE                                               |                                | STARTED<br>23 JAN 92<br>COMPLETED<br>23 JAN 92                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                                                                       |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                              |                                | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                           |  |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                                 |              |                                                                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.            |                                |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>a                                                           | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                                | % CORE<br>RECOV-<br>ERY                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS    |  |
|                                                                                                                              |              |                                                                       | Water                                                                                            |                                                             |                                | Scale change at 43.9'                                                                            |  |
|                                                                                                                              |              |                                                                       | Bottom of Harbor 43.9'                                                                           |                                                             |                                | Set 6" diameter casing by own weight to 44.8'                                                    |  |
| -43.9'                                                                                                                       | 45           | (SC) Olive, fine, clayey SAND. Some silt.                             |                                                                                                  |                                                             | 1                              | 12                                                                                               |  |
|                                                                                                                              |              |                                                                       |                                                                                                  |                                                             |                                | 39                                                                                               |  |
| -48.4'                                                                                                                       | 50           | (SM) Olive, fine silty SAND. Some clay.                               |                                                                                                  |                                                             | 2                              | 50                                                                                               |  |
|                                                                                                                              |              |                                                                       |                                                                                                  |                                                             |                                | 51                                                                                               |  |
|                                                                                                                              |              |                                                                       |                                                                                                  |                                                             |                                | 39                                                                                               |  |
| -52.9'                                                                                                                       | 55           | (SC) Olive-grey, fine clayey SAND. Some silt.                         |                                                                                                  |                                                             | 3                              | 27                                                                                               |  |
|                                                                                                                              |              |                                                                       |                                                                                                  |                                                             |                                | 34                                                                                               |  |
|                                                                                                                              |              |                                                                       |                                                                                                  |                                                             |                                | 63                                                                                               |  |
| -57.4'                                                                                                                       |              | (CH) Dark olive-grey, fat CLAY. Some silt & fine sand, trace of mica. |                                                                                                  |                                                             | 4                              | 69                                                                                               |  |
| -58.9'                                                                                                                       |              | (SC) Olive-grey, fine clayey SAND. Trace of silt.                     |                                                                                                  |                                                             | 5                              | 74                                                                                               |  |
| -60.4'                                                                                                                       | 60           |                                                                       |                                                                                                  |                                                             |                                | 57                                                                                               |  |
|                                                                                                                              |              |                                                                       | Bottom of Boring 60.4'                                                                           |                                                             |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spoilspoon w/140 lb. hammer falling 30". |  |
|                                                                                                                              |              |                                                                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                             |                                |                                                                                                  |  |



Hole No. SM-193

| DRILLING LOG                                                                                                                 |                | ISOM<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                             |                              | SHEET 1<br>of 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |                |                        |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/8" fishtail |                              |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-826339 Y-765324 GA. EAST                                                           |                |                        |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                              |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |                |                        |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314    |                              |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-195                                                            |                |                        |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                              | 13. DISTURBED : 0<br>UNDISTURBED : 0                                                             |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |                |                        |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                             |                              |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                |                        |                                                                                                  | 15. ELEVATION GROUND WATER N/A                            |                              |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 60.4' (Water 48.4')                                                                               |                |                        |                                                                                                  | 16. DATE HOLE                                             |                              | 16. STARTED : 15 DEC 91<br>COMPLETED : 15 DEC 91                                                 |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |                |                        |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                            |                              |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                                 |                |                        |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                              |                                                                                                  |  |
|                                                                                                                              |                |                        |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                              |                                                                                                  |  |
| ELEVATION<br>0 = 0                                                                                                           | DEPTH<br>0 = 0 | LEGEND<br>c            | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                   | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g        |  |
|                                                                                                                              |                |                        | Water                                                                                            |                                                           |                              | Scale change at 45.0'. Set 6" diameter casing by own weight is 49.3'.                            |  |
|                                                                                                                              | 45             |                        | Bottom of Harbor 48.4'                                                                           |                                                           |                              |                                                                                                  |  |
| -48.4'                                                                                                                       |                |                        | (SC) Olive grey, fine clayey SAND. Some silt.                                                    |                                                           | 1                            | 15                                                                                               |  |
| -49.9'                                                                                                                       |                |                        | Trace of silt.                                                                                   |                                                           | 2                            | 47                                                                                               |  |
|                                                                                                                              | 55             |                        |                                                                                                  |                                                           | 3                            | 37                                                                                               |  |
|                                                                                                                              |                |                        |                                                                                                  |                                                           | 4                            | 37                                                                                               |  |
|                                                                                                                              | 60             |                        | Bottom of Boring 60.4'                                                                           |                                                           |                              | 45                                                                                               |  |
| -60.4'                                                                                                                       |                |                        | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                              | 51                                                                                               |  |
|                                                                                                                              |                |                        |                                                                                                  |                                                           |                              | 56                                                                                               |  |
|                                                                                                                              |                |                        |                                                                                                  |                                                           |                              | 58                                                                                               |  |
|                                                                                                                              |                |                        |                                                                                                  |                                                           |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |

MOB NO. 37-191

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                 |                          | SHEET 1<br>OF 1 SHEETS                                                                                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5 1/2" fish tail |                          |                                                                                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=827358 Y=764236 GA. EAST                                                           |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or WSL)<br>MLW             |                          |                                                                                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314        |                          |                                                                                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-197                                                            |              |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                    |                          | DISTURBED<br>6<br>UNDISTURBED<br>0                                                                                                                               |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                              |                          |                                                                                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                |                          |                                                                                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 60.0' (Water 39.0')                                                                               |              |                            |                                                                                                  | 16. DATE HOLE                                                 |                          | STARTED<br>4 FEB 92<br>COMPLETED<br>4 FEB 92                                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                |                          |                                                                                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |              |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                        |                          |                                                                                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |                          |                                                                                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE RECOVERY                                               | BOX OR SAMPLE NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g<br>BLOWS                                                                  |  |
|                                                                                                                              | 35           |                            | Water                                                                                            |                                                               |                          | Scale change at 35.0'.<br>Set 5" diameter casing by own weight to 42.7'.                                                                                         |  |
| -39.0'                                                                                                                       | 40           |                            | Bottom of Harbor 39.0'                                                                           |                                                               |                          |                                                                                                                                                                  |  |
|                                                                                                                              |              |                            | (SM) Dark-grey, medium to coarse silty SAND. Trace of wood particles.                            |                                                               | 1                        | Weight of rods drove split spoon from 39.0' to 42.0'. 0                                                                                                          |  |
| -42.0'                                                                                                                       |              |                            | (SP) Dark grey, coarse, poorly graded SAND. Trace of silt.                                       |                                                               | 2                        | No recovery after first attempt from 46.5' to 48.0'. Redrove to 48.0' then cont'd. drive to 49.5'. Sample 3 from 46.5' to 49.5'. 17                              |  |
| -43.5'                                                                                                                       | 45           |                            | Grey & tan.                                                                                      |                                                               |                          | Had excessive binding inside casing while driving split spoon from 48.0' to 49.5' causing casing to be driven 0.7". This resulted in a high blow count of 53. 10 |  |
| -46.5'                                                                                                                       |              |                            | Greyish-brown, medium to coarse sand, layer of clayey sand at 49.4' to 49.5'.                    |                                                               | 3                        | 22                                                                                                                                                               |  |
| -49.5'                                                                                                                       | 50           |                            | (SC) Olive-grey, fine clayey SAND. Some silt.                                                    |                                                               | 4                        | 17                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                               |                          | 53                                                                                                                                                               |  |
|                                                                                                                              | 55           |                            |                                                                                                  |                                                               | 5                        | 20                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                               |                          | 26                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                               |                          | 35                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                               |                          | 31                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                               |                          | 30                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                                  |                                                               |                          | 37                                                                                                                                                               |  |
| -60.0'                                                                                                                       | 60           |                            | Bottom of Boring 60.0'                                                                           |                                                               | 6                        | 36                                                                                                                                                               |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                               |                          | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/ 140 lb. hammer falling 30".                                                               |  |

Hole No. SM-190

|                                                                                                                              |                          |                                                                               |                                                                                                        |                         |                                |                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|
| DRILLING LOG                                                                                                                 | VISION<br>SOUTH ATLANTIC | INSTALLATION<br>SAVANNAH, GA.                                                 | SHEET 1<br>OF 1 SHEETS                                                                                 |                         |                                |                                                                                                          |
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |                          | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5 1/2" fishtail                  |                                                                                                        |                         |                                |                                                                                                          |
| 2. LOCATION (Coordinates or Station)<br>X-828240 Y-763367 GA. EAST                                                           |                          | 11. DATUM FOR ELEVATION SHOWN (FBM or MSL)<br>MLW                             |                                                                                                        |                         |                                |                                                                                                          |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                         |                                                                                                        |                         |                                |                                                                                                          |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-198                                                            |                          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :UNDISTURBED<br>: 6 : 0 |                                                                                                        |                         |                                |                                                                                                          |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |                          | 14. TOTAL NUMBER CORE BOXES 0                                                 |                                                                                                        |                         |                                |                                                                                                          |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                          | 15. ELEVATION GROUND WATER N/A                                                |                                                                                                        |                         |                                |                                                                                                          |
| 7. THICKNESS OF OVERBURDEN 60.9' (Water 43.9')                                                                               |                          | 16. DATE HOLE :STARTED :COMPLETED<br>: 4 FEB 92 : 4 FEB 92                    |                                                                                                        |                         |                                |                                                                                                          |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |                          | 17. ELEVATION TOP OF HOLE 0.0'                                                |                                                                                                        |                         |                                |                                                                                                          |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                                                 |                          | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                      |                                                                                                        |                         |                                |                                                                                                          |
|                                                                                                                              |                          | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                              |                                                                                                        |                         |                                |                                                                                                          |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+0             | LEGEND<br>c                                                                   | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                                      | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>BLOWS             |
|                                                                                                                              |                          |                                                                               | Water                                                                                                  |                         |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own weight<br>to 46.7'.                              |
|                                                                                                                              | 40                       |                                                                               | Bottom of Harbor 43.9'                                                                                 |                         |                                |                                                                                                          |
| -43.9'                                                                                                                       | 45                       |                                                                               | (MH) Black clayey SILT.                                                                                |                         | 1                              | Weight of rods drove split spoon<br>from 43.9' to 45.9';                                                 |
| -45.9'                                                                                                                       |                          |                                                                               | (SM) Black, medium to coarse silty SAND.<br>Some wood particles, trace of clay.                        |                         | 2                              |                                                                                                          |
| -48.9'                                                                                                                       |                          |                                                                               | (SP) Light brownish-grey, coarse, poorly<br>graded SAND. Some fine gravel.                             |                         | 3                              |                                                                                                          |
| -50.4'                                                                                                                       | 50                       |                                                                               | (SC) Olive-grey, fine, clayey SAND. Trace<br>of silt & coarse gravel.                                  |                         | 4                              |                                                                                                          |
| -53.4'                                                                                                                       |                          |                                                                               | (CL) Olive-grey, lean CLAY. Some silt & fine<br>sand. Trace of silt, wood & fine gravel.               |                         | 5                              |                                                                                                          |
| -54.9'                                                                                                                       | 55                       |                                                                               | (SC) Olive-grey, fine, clayey SAND. Trace of<br>silt, wood & fine gravel.                              |                         | 6                              |                                                                                                          |
| -57.9'                                                                                                                       |                          |                                                                               |                                                                                                        |                         |                                |                                                                                                          |
| -59.4'                                                                                                                       | 60                       |                                                                               |                                                                                                        |                         |                                |                                                                                                          |
| -60.9'                                                                                                                       |                          |                                                                               |                                                                                                        |                         |                                |                                                                                                          |
|                                                                                                                              |                          |                                                                               | Bottom of Boring 60.9'                                                                                 |                         |                                |                                                                                                          |
|                                                                                                                              |                          |                                                                               | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                         |                                | BLOWS PER FOOT:<br><br>Number required to drive 1 3/4" I.D.<br>split spoon w/140 lb. hammer falling 30". |

Hole No. SH-199

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                           |                                      | SHEET 1<br>OF 1 SHEETS                                                                                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 5/8" fish tail          |                                      |                                                                                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-829313 Y-762257 GA. EAST                                                           |              |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL)<br>MLW                       |                                      |                                                                                                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                  |                                      |                                                                                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-199                                                            |              |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 7 UNDISTURBED 0 |                                      |                                                                                                                                                                   |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                        |                                      |                                                                                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                       |                                      |                                                                                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (Water 42.0')                                                                            |              |                          |                                                                                                  | 16. DATE HOLE<br>STARTED 5 FEB 92 COMPLETED 5 FEB 92                    |                                      |                                                                                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                       |                                      |                                                                                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>60.0'                                                                                              |              |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                               |                                      |                                                                                                                                                                   |  |
|                                                                                                                              |              |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                        |                                      |                                                                                                                                                                   |  |
| ELEVATION<br>Q.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE<br>RECOVER-<br>ERY<br>e                                          | BOX OR<br>SAMPLE<br>NO.<br>JARS<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g                                                                          |  |
|                                                                                                                              |              |                          | Water                                                                                            |                                                                         |                                      | Scale change at 40.0'. Set 6" diameter casing by own weight to 47.8'.                                                                                             |  |
|                                                                                                                              | 40           |                          | Bottom of Harbor 42.0'                                                                           |                                                                         |                                      |                                                                                                                                                                   |  |
| -42.0'                                                                                                                       |              |                          | (SM) Very dark grey to black, medium to coarse silty SAND. Some clay.                            |                                                                         | 1                                    | Weight of rods drove split spoon from 42.0' to 43.5'. 3                                                                                                           |  |
| -43.5'                                                                                                                       |              |                          | (SP) Brownish-grey, coarse, poorly graded SAND. Trace of fine gravel, silt & clay.               |                                                                         |                                      | No recovery at first attempt from 45.0' to 46.5'. Redrove to 46.5', then can't drive to 48.0'. High blow count of 46 probably due to toolbinding inside casing. 6 |  |
| -45.0'                                                                                                                       | 45           |                          | No clay.                                                                                         |                                                                         |                                      | 5                                                                                                                                                                 |  |
|                                                                                                                              |              |                          |                                                                                                  |                                                                         |                                      | 46                                                                                                                                                                |  |
| -49.5'                                                                                                                       | 50           |                          | (SC) Olive-grey, fine, clayey SAND. Some silt.                                                   |                                                                         | 2                                    | 41                                                                                                                                                                |  |
| -51.0'                                                                                                                       |              |                          | Trace of silt.                                                                                   |                                                                         |                                      | 34                                                                                                                                                                |  |
| -52.5'                                                                                                                       |              |                          | Some silt.                                                                                       |                                                                         | 3                                    | 100/0.9                                                                                                                                                           |  |
| -54.0'                                                                                                                       | 55           |                          | (CL) Olive-grey, lean CLAY. Some silt & fine sand.                                               |                                                                         | 4                                    | 32                                                                                                                                                                |  |
| -57.0'                                                                                                                       |              |                          | (SC) Olive-grey, fine, clayey SAND. Trace of silt.                                               |                                                                         |                                      | 27                                                                                                                                                                |  |
| -60.0'                                                                                                                       | 60           |                          | Bottom of Boring 60.0'                                                                           |                                                                         | 5                                    | 22                                                                                                                                                                |  |
|                                                                                                                              |              |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                         |                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". 35                                                              |  |

HOLE NO. 37-200

| DRILLING LOG                                                                                                                 |              | VISION<br>SOUTH ATLANTIC |                                                                                          | INSTALLATION<br>SAVANNAH, GA.                                                                     |                              | SHEET 1<br>OF 1 SHEETS                                                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                          |                                                                                          | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLIT SPOON, 5/8" FISHTAIL                                     |                              |                                                                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-829915 Y-762329 GA. EAST                                                           |              |                          |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                              |                                                                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                          |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                            |                              |                                                                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and this number)<br>SH-200                                                            |              |                          |                                                                                          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>8                                                   |                              | 13. DISTURBED<br>0                                                                                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                          |                                                                                          | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                              | 13. UNDISTURBED<br>0                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                          |                                                                                          | 15. ELEVATION GROUND WATER<br>N/A                                                                 |                              |                                                                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>60.2' (Water 38.9')                                                                            |              |                          |                                                                                          | 16. DATE HOLE<br>20 NOV 91                                                                        |                              | 16. STARTED<br>20 NOV 91                                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                          |                                                                                          | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                              | 16. COMPLETED<br>20 NOV 91                                                                                                                |  |
| 9. TOTAL DEPTH OF HOLE<br>60.2'                                                                                              |              |                          |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                         |                              |                                                                                                                                           |  |
|                                                                                                                              |              |                          |                                                                                          | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                              |                                                                                                                                           |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                        | % CORE<br>RECOVERY<br>e                                                                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                 |  |
|                                                                                                                              | 35           |                          | Water                                                                                    |                                                                                                   |                              |                                                                                                                                           |  |
|                                                                                                                              |              |                          | Bottom of Harbor 38.9'                                                                   |                                                                                                   |                              |                                                                                                                                           |  |
| -38.9'                                                                                                                       | 40           |                          | (MH) Dark grey to black, clayey SILT. Some fine to coarse sand, very wet & soft.         |                                                                                                   | 1                            | No. split spoon recovery from 42.2' to 43.7'. Redrill to 43.7' then cont'd. drive to 45.2'. Made batch of Florigel drilling mud at 45.2'. |  |
| -40.7'                                                                                                                       |              |                          | (SM) Grey, medium to coarse, silty SAND. Trace of clay.                                  |                                                                                                   | 2                            |                                                                                                                                           |  |
| -42.2'                                                                                                                       |              |                          | (SP) Greyish-tan, coarse, poorly graded SAND. Some fine gravel.                          |                                                                                                   | 3                            |                                                                                                                                           |  |
| -45.2'                                                                                                                       | 45           |                          | (GP) Greyish-tan, fine, poorly graded gravel. Some medium to coarse sand, trace of silt. |                                                                                                   | 4                            |                                                                                                                                           |  |
| -46.7'                                                                                                                       |              |                          | (SM) Light olive-grey, fine, silty, SAND. Trace of clay.                                 |                                                                                                   | 5                            |                                                                                                                                           |  |
| -48.2'                                                                                                                       |              |                          | Partially indurated from 48.2' to 49.7'.                                                 |                                                                                                   |                              |                                                                                                                                           |  |
| -51.2'                                                                                                                       | 50           |                          | (SC) Olive-grey, fine, clayey SAND. Some silt.                                           |                                                                                                   | 6                            |                                                                                                                                           |  |
| -55.7'                                                                                                                       | 55           |                          | (SM) Light olive-grey, fine, silty SAND. Trace of clay.                                  |                                                                                                   | 7                            |                                                                                                                                           |  |
| -57.2'                                                                                                                       |              |                          | Occasional clay layers up to 0.2' thick.                                                 |                                                                                                   | 8                            |                                                                                                                                           |  |
| -60.2'                                                                                                                       | 60           |                          | Bottom of Boring 60.2'                                                                   |                                                                                                   |                              |                                                                                                                                           |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                          |                                                                                          | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |                              |                                                                                                                                           |  |

| DRILLING LOG                                                                                                              |            | Hole No. <u>SP-1</u>                                                                       |                                                   |                                                                                                      |                              |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------|
| DIVISION <u>SOUTH ATLANTIC</u>                                                                                            |            | INSTALLATION <u>SAVANNAH RIVER</u>                                                         |                                                   |                                                                                                      |                              |                                                                                                      |
| PROJECT <u>S.C.L. RAILROAD BRIDGE</u>                                                                                     |            | SHEET <u>1</u> OF <u>2</u> SHEETS                                                          |                                                   |                                                                                                      |                              |                                                                                                      |
| LOCATION (Coordinates or Station) <u>(SEE PMT)</u>                                                                        |            | 10. SIZE AND TYPE OF BIT <u>1 1/8" ID SPLITSPOON</u>                                       |                                                   |                                                                                                      |                              |                                                                                                      |
| 1. <u>65' DOWNSTREAM FROM BRIDGE ABUTMENT</u>                                                                             |            | 11. DATUM FOR ELEVATION SHOWN <u>(SEE PMT)</u>                                             |                                                   |                                                                                                      |                              |                                                                                                      |
| 3. DRILLING AGENCY <u>SAVANNAH DIST. ST</u>                                                                               |            | 12. MANUFACTURER'S DESIGNATION OF DRILL <u>MLW</u>                                         |                                                   |                                                                                                      |                              |                                                                                                      |
| 4. HOLE NO. (As shown on ground title) and file number <u>SP-1</u>                                                        |            | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN <u>5</u> DISTURBED <u>5</u> UNDISTURBED <u>0</u> |                                                   |                                                                                                      |                              |                                                                                                      |
| 5. NAME OF DRILLER <u>T. W. SCOTT</u>                                                                                     |            | 14. TOTAL NUMBER CORE BOXES <u>4</u>                                                       |                                                   |                                                                                                      |                              |                                                                                                      |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            | 15. ELEVATION GROUND WATER _____                                                           |                                                   |                                                                                                      |                              |                                                                                                      |
| 7. THICKNESS OF OVERBURDEN <u>- 47.2'</u>                                                                                 |            | 16. DATE HOLE STARTED <u>20 APRIL 1976</u> COMPLETED <u>20 APRIL 1976</u>                  |                                                   |                                                                                                      |                              |                                                                                                      |
| 8. DEPTH DRILLED INTO ROCK <u>0.0'</u>                                                                                    |            | 17. ELEVATION TOP OF HOLE <u>- 35.7'</u> <u>MLW</u>                                        |                                                   |                                                                                                      |                              |                                                                                                      |
| 9. TOTAL DEPTH OF HOLE <u>- 67.2' MLW</u>                                                                                 |            | 18. TOTAL CORE RECOVERY FOR BORING <u>1</u>                                                |                                                   |                                                                                                      |                              |                                                                                                      |
|                                                                                                                           |            | 19. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>                                       |                                                   |                                                                                                      |                              |                                                                                                      |
| ELEVATION<br>a                                                                                                            | DEPTH<br>b | LEGEND<br>c                                                                                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVERY<br>e                                                                              | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weighting, etc., if significant)<br>g             |
|                                                                                                                           |            |                                                                                            | WATER DEPTH - 35.7'                               |                                                                                                      |                              | Note: Set 4" Casing.<br>Clean out hole<br>using Fish-tail Bit<br>before driving Splitspoon.<br>Blows |
| -35.7                                                                                                                     | 0'         |                                                                                            | OH- BLACK AND DARK<br>GRAY SOFT ORGANIC<br>SILT   |                                                                                                      | 1                            | 2                                                                                                    |
| -39.2                                                                                                                     | 5'         |                                                                                            | SM- OLIVE GREEN<br>FINE SILTY SAND                |                                                                                                      | 2                            | 10                                                                                                   |
| -46.7                                                                                                                     | 10'        |                                                                                            | ML- OLIVE GREEN<br>INORGANIC SILT                 |                                                                                                      | 3                            | 50                                                                                                   |
|                                                                                                                           | 15'        |                                                                                            |                                                   |                                                                                                      | 59                           |                                                                                                      |
|                                                                                                                           | 20'        |                                                                                            |                                                   |                                                                                                      | 54                           |                                                                                                      |
|                                                                                                                           | 25'        |                                                                                            |                                                   |                                                                                                      | 61                           |                                                                                                      |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      | 4                            | 58                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 51                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 55                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 62                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 59                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 64                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 77                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 51                                                                                                   |
|                                                                                                                           |            |                                                                                            |                                                   |                                                                                                      |                              | 41                                                                                                   |
| -60.7                                                                                                                     | 25'        | Continued on Sheet No. 2                                                                   |                                                   |                                                                                                      |                              |                                                                                                      |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                                   |            |                                                                                            |                                                   | BLOWS PER FOOT:<br>Number required to drive<br>1 1/8" ID splitspoon w/140 lb.<br>hammer falling 30". |                              |                                                                                                      |

| DRILLING LOG (Cont Sheet)     |            | FROM TOP OF HOLE        |                                                   | Hole No. <i>SP. 1</i>          |                              |                                                                                           |
|-------------------------------|------------|-------------------------|---------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT                       |            | INSTALLATION            |                                                   | SHEET <i>2</i>                 |                              |                                                                                           |
| <i>S.C.L. RAILROAD BRIDGE</i> |            | <i>SAVANNAH HARBOUR</i> |                                                   | OF <i>2</i> SHEETS             |                              |                                                                                           |
| ELEVATION<br>a                | DEPTH<br>b | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                               | <i>27'</i> |                         | <i>ML- OLIVE GREEN<br/>INORGANIC S&amp;T</i>      |                                | <i>5</i>                     | <i>33</i>                                                                                 |
|                               |            |                         |                                                   |                                |                              | <i>44</i>                                                                                 |
|                               |            |                         |                                                   |                                |                              | <i>29</i>                                                                                 |
|                               | <i>30'</i> |                         |                                                   |                                |                              | <i>31</i>                                                                                 |
| <i>-67.2</i>                  |            |                         | <i>BOTTOM OF HOLE -67.2 MHW</i>                   |                                |                              | <i>32</i>                                                                                 |

| DRILLING LOG                                            |       | DIVISION                                                                                             |                                                                                                                 | INSTALLATION                                |                   | Hole No. V-63                                                                  |  | SHEET 1 OF 1 SHEETS |  |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|---------------------|--|
| 1. PROJECT                                              |       | South Atlantic                                                                                       |                                                                                                                 | Savannah, Ga.                               |                   |                                                                                |  |                     |  |
| 2. LOCATION (Coordinates or Station)                    |       | Widening & Deepening Savannah Harbor                                                                 |                                                                                                                 | 10. SIZE AND TYPE OF BIT                    |                   | 3 1/2" I.D. Sampler                                                            |  |                     |  |
| 3. HOLE NO. (As shown on drawing title and file number) |       | STA 111/11, N. Side                                                                                  |                                                                                                                 | 11. BATHY FOR ELEVATION SHOWN (T.B.W. #122) |                   | MIW                                                                            |  |                     |  |
| 4. DRILLING AGENCY                                      |       | Alpine Geophysical Asso.                                                                             |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL     |                   | Alpine 20' Vibratory Sampler                                                   |  |                     |  |
| 5. HOLE NO. (As shown on drawing title and file number) |       | V-63                                                                                                 |                                                                                                                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN   |                   | DISTURBED 1 UNDISTURBED                                                        |  |                     |  |
| 6. NAME OF DRILLER                                      |       | Al Steckel                                                                                           |                                                                                                                 | 14. TOTAL NUMBER CORE BONES                 |                   | 1 plastic tube                                                                 |  |                     |  |
| 7. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                                 | 15. ESTIMATE GROUND-WATER                   |                   | Tide gauge 2.4                                                                 |  |                     |  |
| 8. THICKNESS OF OVERBURDEN                              |       |                                                                                                      |                                                                                                                 | 16. DATE HOLE                               |                   | 5-20-67                                                                        |  | 5-20-67             |  |
| 9. DEPTH DRILLED INTO ROCK                              |       |                                                                                                      |                                                                                                                 | 17. ELEVATION TOP OF HOLE                   |                   | -30.1                                                                          |  |                     |  |
| 10. TOTAL DEPTH OF HOLE                                 |       | 18.0'                                                                                                |                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING          |                   | 95%                                                                            |  |                     |  |
|                                                         |       |                                                                                                      |                                                                                                                 | 19. SIGNATURE OF INSPECTOR                  |                   | J. A. Albritton                                                                |  |                     |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                       | % CORE RECOVERY                             | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |                     |  |
| -30.0                                                   |       |                                                                                                      |                                                                                                                 |                                             |                   | Time Sec./ft.                                                                  |  |                     |  |
| -35.0                                                   |       |                                                                                                      | MI-gray, soft silt                                                                                              |                                             |                   |                                                                                |  |                     |  |
| -40.0                                                   |       |                                                                                                      | SP-gray, fine to med. grained, micaceous sand.                                                                  |                                             | V-63              |                                                                                |  |                     |  |
| -45.0                                                   |       |                                                                                                      | SM-Lt. gray, fine grained silty sand.                                                                           |                                             |                   |                                                                                |  |                     |  |
| -45.0                                                   |       |                                                                                                      | SP-Light gray, medium grained sand.                                                                             | 95                                          |                   |                                                                                |  |                     |  |
| -45.0                                                   |       |                                                                                                      | SM-Lt-gray very fine sand and light green, dense silt with chips of mottled gray & green siltstone & sandstone. |                                             |                   |                                                                                |  |                     |  |
|                                                         |       |                                                                                                      | Bottom of Hole -48.1                                                                                            |                                             |                   |                                                                                |  |                     |  |
|                                                         |       |                                                                                                      | Note: Soils field classified in accordance with the Unified Soil Classification System.                         |                                             |                   |                                                                                |  |                     |  |

NO CORE RECOVERY  
 ONLY



| DRILLING LOG                                            |       | REVISION                                                                                             |                                                                                   | INSTALLATION           |                   | FIG. NO.                                                                       |  | V-64                      |  |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------|-------------------|--------------------------------------------------------------------------------|--|---------------------------|--|
| 1. PROJECT                                              |       | 2. LOCATION (Coordinates or Station)                                                                 |                                                                                   | 3. DATE AND TYPE OF HW |                   | 4. SIZE AND TYPE OF HW                                                         |  | 5. SHEET OF 1 SHEETS      |  |
| Widening & Deepening Savannah Harbor                    |       | Southeast Atlantic                                                                                   |                                                                                   | Sav. Ga.               |                   | 3-1/2" ID Sampler                                                              |  | 1.                        |  |
| Sta. 114, S. Side                                       |       |                                                                                                      |                                                                                   |                        |                   | 16. SIZE AND TYPE OF HW                                                        |  |                           |  |
| JERLING AGENCY                                          |       |                                                                                                      |                                                                                   |                        |                   | 17. DRAIN FOR ELEVATION SHOWN (TODAY'S NOSE)                                   |  |                           |  |
| Alpine Geophysical Asso.                                |       |                                                                                                      |                                                                                   |                        |                   | MLW                                                                            |  |                           |  |
| 1. HOLE NO. (As shown on drawing table and file number) |       | V-64                                                                                                 |                                                                                   |                        |                   | 17. MANUFACTURER'S DESIGNATION OF DRILL                                        |  |                           |  |
| 3. NAME OF DRILLER                                      |       | Al Stockel                                                                                           |                                                                                   |                        |                   | Alpine 20' Vibratory Sampler                                                   |  |                           |  |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                   |                        |                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                      |  | 1 DISTURBED 0 UNDISTURBED |  |
| 7. THICKNESS OF OVERBURDEN                              |       |                                                                                                      |                                                                                   |                        |                   | 14. TOTAL NUMBER CORE BORES                                                    |  | 1 Plastic Tube            |  |
| 8. DEPTH DRILLED INTO ROCK                              |       |                                                                                                      |                                                                                   |                        |                   | 15. ELEVATION GROUND WATER                                                     |  | Tide Gage 1.3             |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 11.7'                                                                                                |                                                                                   |                        |                   | 16. DATE HOLE                                                                  |  | 5-20-67                   |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 17. ELEVATION TOP OF HOLE                                                      |  | -31.7                     |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 18. TOTAL CORE RECOVERY FOR BORING                                             |  | 75 %                      |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 19. SIGNATURE OF INSPECTOR                                                     |  | J. A. Albritton           |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY        | NO. OF SAMPLE NO. | REMARKS (Drilling time, water test, depth of weathering, etc., if significant) |  |                           |  |
| -30.0                                                   |       |                                                                                                      |                                                                                   |                        |                   | Time Sec./Ft.                                                                  |  |                           |  |
| -35.0                                                   |       |                                                                                                      | MH-Gray, very soft silt.                                                          |                        |                   | 0.5                                                                            |  |                           |  |
|                                                         |       |                                                                                                      | SH-Gray, medium grained, silty sand.                                              |                        |                   | 0.5                                                                            |  |                           |  |
| -40.0                                                   |       |                                                                                                      | SP-Gray, medium grained, slightly silty, micaceous sand.                          |                        |                   | 0.5                                                                            |  |                           |  |
|                                                         |       |                                                                                                      | SM-Gray, fine grained, micaceous sand.                                            |                        |                   | 1.0                                                                            |  |                           |  |
| -45.0                                                   |       |                                                                                                      | SM-ML-Gray, fine sand and green, hard, dense silt.                                |                        |                   | 6.0                                                                            |  |                           |  |
|                                                         |       |                                                                                                      | BOTTOM OF HOLE--43.4'                                                             |                        |                   | 13.0                                                                           |  |                           |  |
|                                                         |       |                                                                                                      | Soils field classified in accordance with the Unified Soil Classification System. |                        |                   | 12.0                                                                           |  |                           |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 7.0                                                                            |  |                           |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 6.0                                                                            |  |                           |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 7.0                                                                            |  |                           |  |
|                                                         |       |                                                                                                      |                                                                                   |                        |                   | 85.0                                                                           |  |                           |  |

Zone of Core Loss

-31.7 to -36.0

-31.7 to -36.0

-31.7 to -36.0

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-31.7 to -36.0

-31.7 to -36.0

[illegible]

| DRILLING LOG                                                                                                                 |       | DIVISION     |                                                                                         | INSTALLATION                                                            |                         | SHEET                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| SOUTH ATLANTIC                                                                                                               |       | Savannah, GA |                                                                                         | 1                                                                       |                         | 1                                                                                    |  |
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                           |       |              |                                                                                         | 10. SIZE AND TYPE OF DRILL<br>3-1/2" Sampler                            |                         |                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>Sta. 112A, S. Side                                                                   |       |              |                                                                                         | 11. DARIUM FOR ELEVATION SHOWN (FORMULA NO.)<br>M.W.                    |                         |                                                                                      |  |
| 3. DRILLING AGENCY<br>Alpine Geophysical Asso.                                                                               |       |              |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine 20" Vibratory Sampler |                         |                                                                                      |  |
| 4. AS MO. (As shown on drawing title and file number)<br>V-66B                                                               |       |              |                                                                                         | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 0                        |                         |                                                                                      |  |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                             |       |              |                                                                                         | 14. TOTAL NUMBER CORE BOXES<br>1 Plastic Tube                           |                         |                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |              |                                                                                         | 15. ELEVATION GROUND WATER - Tide Gage -0.3                             |                         |                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |              |                                                                                         | 16. DATE HOLE<br>STARTED 5-20-67 COMPLETED 5-20-67                      |                         |                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |       |              |                                                                                         | 17. ELEVATION TOP OF HOLE<br>-32.3                                      |                         |                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE<br>15.7'                                                                                              |       |              |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>75 %                              |                         |                                                                                      |  |
|                                                                                                                              |       |              |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                           |                         |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND       | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOVERY                                                      | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| -30.0                                                                                                                        |       |              |                                                                                         |                                                                         |                         | Time<br>Sec/Ft.                                                                      |  |
| -35.0                                                                                                                        |       |              | MH-Gray, very soft silt<br>with wood chips.                                             |                                                                         |                         | 0.5<br>0.5<br>0.5<br>0.5<br>1.0<br>1.3                                               |  |
| -40.0                                                                                                                        |       |              | SM-Gray, fine to medium<br>grained, silty sand.                                         | 75                                                                      | V-66B                   | Zone of Core Loss<br>-32.3 to -37.8<br>1.0<br>3.0<br>4.0<br>5.0                      |  |
| -45.0                                                                                                                        |       |              | SP-Gray, fine to medium<br>grained, slightly silty<br>sand.<br>Light gray, coarse sand. |                                                                         |                         | 7.0<br>5.0<br>5.0<br>6.0<br>4.0<br>0.7                                               |  |
|                                                                                                                              |       |              | ML-Green, dense, dry, slightly<br>plastic silt.                                         |                                                                         |                         |                                                                                      |  |
|                                                                                                                              |       |              | BOTTOM OF HOLE -48.0'                                                                   |                                                                         |                         |                                                                                      |  |
|                                                                                                                              |       |              | Soils field classified in<br>accordance with the Unified<br>Soil Classification System. |                                                                         |                         |                                                                                      |  |

FOR  
 INFORMATION  
 ONLY

| DRILLING LOG                                            |       | DIVISION                       |                                                                                                                  | INSTALLATION                                     |                   | Hole No. V-67                                                                  |  |
|---------------------------------------------------------|-------|--------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| PROJECT                                                 |       | South Atlantic                 |                                                                                                                  | Savannah, Georgia                                |                   | SHEET 1 OF 1 SHEETS                                                            |  |
| Widening and Deepening, Savannah Harbor                 |       |                                |                                                                                                                  | 10. SIZE AND TYPE OF BIT 3 1/2" ID Sampler       |                   |                                                                                |  |
| LOCATION (Coordinates or Locality)                      |       | Sta 111N N. Side               |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (T.B.M. or A.S.L.) |                   | M.L.W.                                                                         |  |
| 2. DRILLING AGENCY                                      |       | Alpine Geophysical Association |                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL          |                   | Alpine 20' Vibratory Sampler                                                   |  |
| 4. HOLE NO. (As shown on drawing scale and file number) |       | V-67                           |                                                                                                                  | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN        |                   | 1                                                                              |  |
| 5. NAME OF DRILLER                                      |       | Al Stockel                     |                                                                                                                  | 14. TOTAL NUMBER CORE BORE 1 plastic tube        |                   |                                                                                |  |
| 6. DIRECTION OF HOLE                                    |       |                                |                                                                                                                  | 15. ELEVATION GROUND WATER Tide Gage 0.0         |                   |                                                                                |  |
| 7. THICKNESS OF OVERBURDEN                              |       |                                |                                                                                                                  | 16. DATE HOLE                                    |                   | STARTED 5/20/67 COMPLETED 5/20/67                                              |  |
| 8. DEPTH DRILLED INTO ROCK                              |       |                                |                                                                                                                  | 17. ELEVATION TOP OF HOLE                        |                   | -29.0                                                                          |  |
| 9. TOTAL DEPTH OF HOLE 18.0'                            |       |                                |                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING               |                   | 85 %                                                                           |  |
|                                                         |       |                                |                                                                                                                  | 19. SIGNATURE OF INSPECTOR                       |                   | I. A. Albritton                                                                |  |
| ELEVATION                                               | DEPTH | LOGGING                        | CLASSIFICATION OF MATERIALS (Description)                                                                        | % CORE RECOVERY                                  | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| -25.0                                                   |       |                                |                                                                                                                  |                                                  |                   |                                                                                |  |
| -30.0                                                   |       |                                | SM-Dark gray, medium grained silty sand with decomposed wood and plant fragments.                                |                                                  |                   | Time Sec./ft                                                                   |  |
| -35.0                                                   |       |                                |                                                                                                                  |                                                  |                   | Zone of core loss -29.0 to -37.0                                               |  |
| -40.0                                                   |       |                                | ST-Tan, medium grained sand.                                                                                     | 85                                               | V-67              | RECEIVED FOR TESTING ONLY                                                      |  |
| -45.0                                                   |       |                                | ML-Green, dense, dry, silt.                                                                                      |                                                  |                   | 11.0 77.0                                                                      |  |
|                                                         |       |                                | Bottom of Hole -47.0<br>Note: Soils field classified in accordance with the Unified Soils Classification System. |                                                  |                   |                                                                                |  |

| <b>DRILLING LOG</b>                                                                                                         |       |        | DIVISION<br><b>SOUTH ATLANTIC</b>                                                                                   |                 | INSTALLATION<br><b>SAVANNAH, GEORGIA</b>                                      |                                                                                                                                                     | Hole No. V-68<br>SHEET 1 OF 1 SHEETS |  |
|-----------------------------------------------------------------------------------------------------------------------------|-------|--------|---------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--|
| 1. PROJECT<br><b>WIDENING &amp; DEEPENING SAVANNAH HARBOR</b>                                                               |       |        |                                                                                                                     |                 | 10. SIZE AND TYPE OF BIT<br><b>3" ID Sampler</b>                              |                                                                                                                                                     |                                      |  |
| 2 LOCATION (Coordinates or Station)<br><b>Station III, S. Side</b>                                                          |       |        |                                                                                                                     |                 | 11. DATUM FOR ELEVATION SHOWN (B.M. or M.S.L.)<br><b>M.S.L.</b>               |                                                                                                                                                     |                                      |  |
| 3 DRILLING AGENCY<br><b>Ipine Geophysical Association</b>                                                                   |       |        |                                                                                                                     |                 | 12. MANUFACTURE'S DESIGNATION OF DRILL<br><b>ALPINE 20' VIBRATORY SAMPLER</b> |                                                                                                                                                     |                                      |  |
| 4 HOLE NO. (As shown on drawing title and file number) <b>V-68</b>                                                          |       |        |                                                                                                                     |                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br><b>1</b>                         |                                                                                                                                                     | UNRECORDED                           |  |
| 5. NAME OF DRILLER<br><b>A1 Stockel</b>                                                                                     |       |        |                                                                                                                     |                 | 14. TOTAL NUMBER CORE PERFECT Plastic Tube                                    |                                                                                                                                                     |                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VER. |       |        |                                                                                                                     |                 | 15. ELEVATION GROUND WATER Title Gate 1.7                                     |                                                                                                                                                     |                                      |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                  |       |        |                                                                                                                     |                 | 16. DATE HOLE<br>STARTED: 5/20/67 COMPLETED: 5/20/67                          |                                                                                                                                                     |                                      |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                  |       |        |                                                                                                                     |                 | 17. ELEVATION TOP OF HOLE -31.3                                               |                                                                                                                                                     |                                      |  |
| 9. TOTAL DEPTH OF HOLE <b>18.0'</b>                                                                                         |       |        |                                                                                                                     |                 | 18. TOTAL CORE RECOVERY FOR BORING 72 %                                       |                                                                                                                                                     |                                      |  |
|                                                                                                                             |       |        |                                                                                                                     |                 | 19. SIGNATURE OF INSPECTOR<br><b>J. A. ALDRITTON</b>                          |                                                                                                                                                     |                                      |  |
| ELEVATION                                                                                                                   | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                                        | % CORE RECOVERY | BOX OR SAMPLE NO.                                                             | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                   |                                      |  |
| -30.0                                                                                                                       |       |        |                                                                                                                     |                 |                                                                               | Time Sec./ft.                                                                                                                                       |                                      |  |
| -35.0                                                                                                                       |       |        | ML-gray, very soft silt.                                                                                            |                 |                                                                               | Zone of core loss -31.3 to -39<br><br><div style="border: 2px solid black; padding: 5px; transform: rotate(-90deg); width: fit-content;">ONLY</div> |                                      |  |
| -40.0                                                                                                                       |       |        | SP-light gray, medium grained sand.                                                                                 | 72              | V-68                                                                          |                                                                                                                                                     |                                      |  |
| -45.0                                                                                                                       |       |        | ML-Light green, dense, slightly plastic silt.                                                                       |                 |                                                                               |                                                                                                                                                     |                                      |  |
| -50.0                                                                                                                       |       |        | Bottom of Hole 49.3<br>Note: Solis field classification in accordance with the Unified Solis Classification System. |                 |                                                                               |                                                                                                                                                     |                                      |  |

Hole No. V-69A

| DRILLING LOG                                                                                   |       | DIVISION       |                                                                                                                  | INSTALLATION                                     |                   | SHEET                                                                                                             |  |
|------------------------------------------------------------------------------------------------|-------|----------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------|--|
| PROJECT                                                                                        |       | SOUTH ATLANTIC |                                                                                                                  | SAVANNAH (CHM-1)                                 |                   | 1 OF 1 SHEETS                                                                                                     |  |
| Widening & Deepening Savannah Harbor                                                           |       |                |                                                                                                                  | 10. SIZE AND TYPE OF BIT 3 1/2" ID Sampler       |                   |                                                                                                                   |  |
| LOCATION (Continued on Section)                                                                |       |                |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (F.G.M. or A.S.L.) |                   |                                                                                                                   |  |
| Station 110, N. Side                                                                           |       |                |                                                                                                                  | M.W.                                             |                   |                                                                                                                   |  |
| 2. DRILLING AGENCY                                                                             |       |                |                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL          |                   |                                                                                                                   |  |
| Alpine Geophysical Association                                                                 |       |                |                                                                                                                  | Alpine 20 Vibratory Sampler                      |                   |                                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing, note and file number)                                        |       |                |                                                                                                                  | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN        |                   |                                                                                                                   |  |
| V-69A                                                                                          |       |                |                                                                                                                  | DISTURBED UNDISTURBED                            |                   |                                                                                                                   |  |
| 3. NAME OF DRILLER                                                                             |       |                |                                                                                                                  | 14. TOTAL NUMBER CORE BOXES                      |                   |                                                                                                                   |  |
| Al Stockel                                                                                     |       |                |                                                                                                                  | 1 Plastic Tube                                   |                   |                                                                                                                   |  |
| 6. DIRECTION OF HOLE                                                                           |       |                |                                                                                                                  | 15. ELEVATION OF WATER TIDE GAGE 3.6             |                   |                                                                                                                   |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT. |       |                |                                                                                                                  | 16. DATE HOLE                                    |                   |                                                                                                                   |  |
|                                                                                                |       |                |                                                                                                                  | MASTER 5/20/57 COMPLETED 5/20/67                 |                   |                                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN                                                                     |       |                |                                                                                                                  | 17. ELEVATION TOP OF HOLE                        |                   |                                                                                                                   |  |
|                                                                                                |       |                |                                                                                                                  | -30.4                                            |                   |                                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK                                                                     |       |                |                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING               |                   |                                                                                                                   |  |
|                                                                                                |       |                |                                                                                                                  | 70 %                                             |                   |                                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE                                                                         |       |                |                                                                                                                  | 19. SIGNATURE OF INSPECTOR                       |                   |                                                                                                                   |  |
| 18.2'                                                                                          |       |                |                                                                                                                  | J.A. ALBRITTON                                   |                   |                                                                                                                   |  |
| ELEVATION                                                                                      | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                        | % CORE RECOVERY                                  | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                    |  |
| -30.0                                                                                          |       |                |                                                                                                                  |                                                  |                   | Time Sec./ft.                                                                                                     |  |
| -35.0                                                                                          |       |                | Mt-gray, very soft silt.                                                                                         |                                                  |                   | 0.6<br>0.6<br>Zone of core loss -30.4 to -37.0<br>0.6<br>0.6<br>0<br>0<br>2.0                                     |  |
| -40.0                                                                                          |       |                | SM-gray, mod. grained, micaceous, silty sand                                                                     | 70                                               | V-69A             | 3.0<br>5.0<br>9.0<br>10.0<br>12.0<br>14.0<br>16.0<br>18.0<br>20.0<br>22.0<br>24.0<br>26.0<br>28.0<br>30.0<br>31.0 |  |
| -45.0                                                                                          |       |                | SP-tan, medium grained, micaceous sand                                                                           |                                                  |                   | 200/0.7'                                                                                                          |  |
| -50.0                                                                                          |       |                | GL-Green, hard, dense silt, grading toward a compaction shale                                                    |                                                  |                   |                                                                                                                   |  |
|                                                                                                |       |                | Bottom of Hole -49.1<br>Note: Soils field classified in accordance with the Unified Soils Classification System. |                                                  |                   |                                                                                                                   |  |

Hole No. V-708

| DRILLING LOG                                                                                                               |            | DIVISION     | INSTALLATION                                                                            |                         | SHEET                        |                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------|------------|--------------|-----------------------------------------------------------------------------------------|-------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                         |            | 4th Atlantic | Savannah Ga.                                                                            |                         | 1 OF 1 SHEETS                |                                                                                           |
| 2. LOCATION (Coordinates or Station)<br>Sta. 1079, N. Side                                                                 |            |              | 10. SIZE AND TYPE OF BIT<br>3-1/2" ID Sampler                                           |                         |                              |                                                                                           |
| 3. DRILLING AGENCY<br>Alpine Geophysical Asso.                                                                             |            |              | 11. DATUM FOR ELEVATION SHOWN (MEANSEA LEVEL)<br>MLW                                    |                         |                              |                                                                                           |
| 4. HOLE NO. (As shown on drawings and file numbers)<br>V-708                                                               |            |              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine 20' Vibratory Sampler                 |                         |                              |                                                                                           |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                           |            |              | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 0                                        |                         |                              |                                                                                           |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> TILTED _____ DEG. FROM VERT. |            |              | 14. TOTAL NUMBER CORE BOXES<br>1 Plastic Tube                                           |                         |                              |                                                                                           |
| 7. THICKNESS OF OVERBURDEN                                                                                                 |            |              | 15. ELEVATION GROUND WATER<br>Tide Gage 8.6                                             |                         |                              |                                                                                           |
| 8. DEPTH CARIED INTO ROCK                                                                                                  |            |              | 16. DATE HOLE<br>STARTED 5-22-67 COMPLETED 5-22-67                                      |                         |                              |                                                                                           |
| 9. TOTAL DEPTH OF HOLE<br>19.0'                                                                                            |            |              | 17. ELEVATION TOP OF HOLE<br>-31.5                                                      |                         |                              |                                                                                           |
|                                                                                                                            |            |              | 18. TOTAL CORE RECOVERY FOR BORING<br>66 %                                              |                         |                              |                                                                                           |
|                                                                                                                            |            |              | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                                           |                         |                              |                                                                                           |
| ELEVATION<br>a                                                                                                             | DEPTH<br>b | LEGEND<br>c  | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e | BOX OF<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
| -30.0'                                                                                                                     |            |              |                                                                                         |                         |                              | Time<br>Sec/Ft                                                                            |
|                                                                                                                            |            |              | MH-Nearly black, very soft,<br>sandy silt.                                              |                         |                              | 0.5                                                                                       |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 0.5                                                                                       |
| -35.0                                                                                                                      |            |              |                                                                                         |                         |                              | Zones of Core Loss                                                                        |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 3.5' from -31.5                                                                           |
|                                                                                                                            |            |              |                                                                                         |                         |                              | to -37.5                                                                                  |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 0.5                                                                                       |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 2.9' from -40.2                                                                           |
|                                                                                                                            |            |              |                                                                                         |                         |                              | to -47.9                                                                                  |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 0.5                                                                                       |
|                                                                                                                            |            |              | SM-Dark gray, medium grained,<br>silty, micaceous sand.                                 |                         |                              | 2.0                                                                                       |
| -40.0                                                                                                                      |            |              |                                                                                         | 66                      | V-708                        | 0.0                                                                                       |
|                                                                                                                            |            |              | SP-Tan, medium to coarse<br>grained, micaceous sand.                                    |                         |                              | 29.0                                                                                      |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 120.0                                                                                     |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 32.0                                                                                      |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 12.0                                                                                      |
| -45.0                                                                                                                      |            |              |                                                                                         |                         |                              | 6.0                                                                                       |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 6.0                                                                                       |
|                                                                                                                            |            |              | SM-Gray, medium grained, micaceous,<br>silty sand.                                      |                         |                              | 5.0                                                                                       |
|                                                                                                                            |            |              | SP-Tan, medium to coarse grained,<br>micaceous sand.                                    |                         |                              | 5.0                                                                                       |
| -50.0                                                                                                                      |            |              | ML-Green, very dense, slightly plastic<br>silt.                                         |                         |                              | 13.0                                                                                      |
|                                                                                                                            |            |              |                                                                                         |                         |                              | 82.0                                                                                      |
|                                                                                                                            |            |              | BOTTOM OF HOLE -50.5'                                                                   |                         |                              |                                                                                           |
|                                                                                                                            |            |              | Soils field classified in<br>accordance with the Unified<br>Soil Classification System. |                         |                              |                                                                                           |



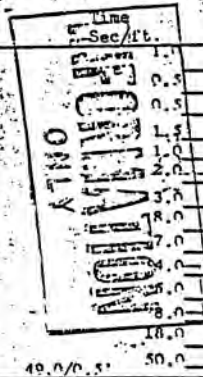
Hole No. V-72

| DRILLING LOG                         |       | DIVISION                                                |                                                                                   | INSTALLATION                            |                   | SHEET                                                                                       |  |
|--------------------------------------|-------|---------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------|-------------------|---------------------------------------------------------------------------------------------|--|
| 1. PROJECT                           |       | 2. LOCATION (Coordinates or Station)                    |                                                                                   | 10. SIZE AND TYPE OF BIT                |                   | 11. DATUM FOR ELEVATION SHOWN (NORMAL SHELL)                                                |  |
| 3. NAME OF DRILLER                   |       | 4. HOLE NO. (As shown on drawing title and file number) |                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL |                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                   |  |
| 5. DIRECTION OF HOLE                 |       | 6. THICKNESS OF OVERBURDEN                              |                                                                                   | 14. TOTAL NUMBER CORE BOXES             |                   | 15. ELEVATION GROUND WATER                                                                  |  |
| 7. DEPTH DRILLED INTO ROCK           |       | 8. TOTAL DEPTH OF HOLE                                  |                                                                                   | 16. DATE HOLE                           |                   | 17. ELEVATION TOP OF HOLE                                                                   |  |
| 9. TOTAL DEPTH OF HOLE               |       | 18. TOTAL CORE RECOVERY FOR BORING                      |                                                                                   | 19. SIGNATURE OF INSPECTOR              |                   | 20. REMARKS                                                                                 |  |
| Atlantic                             |       | Sta. 108, N. Side                                       |                                                                                   | Savannah, Ga.                           |                   | 1                                                                                           |  |
| Widening & Deepening Savannah Harbor |       | V-72                                                    |                                                                                   | 3-1/2" ID Sampler                       |                   | 1                                                                                           |  |
| Alpine Geophysical Asso.             |       |                                                         |                                                                                   | MLW                                     |                   | 0                                                                                           |  |
| Al Stockel                           |       |                                                         |                                                                                   | Alpine 20' Vibratory Sampler            |                   |                                                                                             |  |
| VERTICAL                             |       |                                                         |                                                                                   | 1 Plastic Tube                          |                   |                                                                                             |  |
|                                      |       |                                                         |                                                                                   | Tide Gage 5.6                           |                   |                                                                                             |  |
|                                      |       |                                                         |                                                                                   | 5-22-67                                 |                   | 5-22-67                                                                                     |  |
|                                      |       |                                                         |                                                                                   | -33.2                                   |                   |                                                                                             |  |
|                                      |       |                                                         |                                                                                   | 70 %                                    |                   |                                                                                             |  |
|                                      |       |                                                         |                                                                                   | J. A. Albritton                         |                   |                                                                                             |  |
| ELEVATION                            | DEPTH | LEGEND                                                  | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)              |  |
| -30.0                                |       |                                                         |                                                                                   |                                         |                   | Time Sec/Ft                                                                                 |  |
| -35.0                                |       |                                                         | MH-Dark gray, very soft silt.                                                     |                                         |                   | 1.0<br>0.66<br>0.66<br>2.0<br>2.0<br>3.0<br>3.0<br>4.0<br>5.0<br>5.0<br>8.0<br>11.0<br>73.0 |  |
| -40.0                                |       |                                                         | SM-Dark gray, medium to coarse grained, silty sand.                               | 70                                      | V-72              | Zone of Core Loss -33.2 to -38.3                                                            |  |
| -45.0                                |       |                                                         | SP-Tan, medium to coarse grained sand.                                            |                                         |                   |                                                                                             |  |
| -48.7                                |       |                                                         | Gravelly from -48.7 to -49.2                                                      |                                         |                   |                                                                                             |  |
| -49.2                                |       |                                                         | BOTTOM OF HOLE -49.2'                                                             |                                         |                   |                                                                                             |  |
| -50.0                                |       |                                                         | Soils field classified in accordance with the Unified Soil Classification System. |                                         |                   |                                                                                             |  |



Hole No. V-73

| DRILLING LOG                                                                                                                 |       | DIVISION          |                                                                                                                 | INSTALLATION                                                            |                   | SHEET                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|--|
| South Atlantic                                                                                                               |       | Savannah, Georgia |                                                                                                                 | SHEET 1                                                                 |                   | OF 1 SHEETS                                                                           |  |
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                           |       |                   |                                                                                                                 | 10. SIZE AND TYPE OF BIT<br>3/4" Lib. Sampler                           |                   |                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>STA. 107, N. Side                                                                    |       |                   |                                                                                                                 | 11. DATUM FOR ELEVATION (NGVD or MLLW)                                  |                   |                                                                                       |  |
| 3. DRILLING AGENCY<br>Alpine (Divisional) CSD.                                                                               |       |                   |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine 201 Vibratory Sampler |                   |                                                                                       |  |
| 4. HOLE NO. (As shown on drawing sheet and file number)<br>V-73                                                              |       |                   |                                                                                                                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                               |                   | 14. TOTAL NUMBER CORE BORE                                                            |  |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                             |       |                   |                                                                                                                 | 15. ELEVATION OF GROUND WATER<br>Tide gage 4.6                          |                   | 16. DATE HOLE                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                   |                                                                                                                 | 17. ELEVATION TOP OF HOLE<br>-32.4                                      |                   | 18. TOTAL CORE RECOVERY FOR HOLE<br>64                                                |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |                   |                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                           |                   | 20. REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 8. DEPTH DRILLED INTO HOLE                                                                                                   |       |                   |                                                                                                                 |                                                                         |                   |                                                                                       |  |
| 9. TOTAL DEPTH OF HOLE<br>46.9                                                                                               |       |                   |                                                                                                                 |                                                                         |                   |                                                                                       |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND            | CLASSIFICATION OF MATERIALS (Diagrams)                                                                          | % CORE RECOVERY                                                         | BOX OR SAMPLE NO. |                                                                                       |  |
| -30.0                                                                                                                        |       |                   |                                                                                                                 |                                                                         |                   |                                                                                       |  |
| -35.0                                                                                                                        |       | No Sample         |                                                                                                                 |                                                                         |                   |                                                                                       |  |
| -40.0                                                                                                                        |       |                   | ML, Gray, Fine to medium grained, silty sand with wood chips                                                    | 64                                                                      | V-73              |                                                                                       |  |
| -45.0                                                                                                                        |       |                   | SP - Tan, fine to medium grained, slightly silty sand with wood chips.                                          |                                                                         |                   |                                                                                       |  |
|                                                                                                                              |       |                   | NL, Green, Dense silt.                                                                                          |                                                                         |                   |                                                                                       |  |
|                                                                                                                              |       |                   | Bottom of Hole -46.9<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                         |                   |                                                                                       |  |



| DRILLING LOG                                                                       |  |  | SERVICE                              |  | INSTALLATION                                 |  |
|------------------------------------------------------------------------------------|--|--|--------------------------------------|--|----------------------------------------------|--|
| 1. PROJECT                                                                         |  |  | Atlantic                             |  | Savannah, Ga.                                |  |
| 2. LOCATION (Continuation of Station)                                              |  |  | Widening & Deepening Savannah Harbor |  | 18. SIZE AND TYPE OF BIT 3 1/2 I. D. Sampler |  |
| 3. SITE AGENCY                                                                     |  |  | U.S. Army Geophysical Asso.          |  | 19. DATUM FOR ELEVATION SHOWN (FMS or MSL)   |  |
| 4. HOLE NO. (As shown on drawing title and file number)                            |  |  | V-77                                 |  | MTH                                          |  |
| 5. NAME OF DRILLER                                                                 |  |  | AT Stockel                           |  | 20. MANUFACTURE'S DESIGNATION OF DRILL       |  |
| 6. DIRECTION OF HOLE                                                               |  |  | Vertical                             |  | Alpine 20' Vibratory Sampler                 |  |
| 7. THICKNESS OF OVERBURDEN                                                         |  |  |                                      |  | 21. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN    |  |
| 8. DEPTH DRILLED INTO ROCK                                                         |  |  |                                      |  | 22. TOTAL NUMBER COLLARS                     |  |
| 9. TOTAL DEPTH OF HOLE                                                             |  |  | 14.0                                 |  | 1 plastic tube                               |  |
| 10. ELEVATION                                                                      |  |  |                                      |  | 23. ELEVATION-GROUND WATER                   |  |
| 11. DEPTH                                                                          |  |  |                                      |  | Tide gage 3.4                                |  |
| 12. LEGEND                                                                         |  |  |                                      |  | 24. DATE HOLE                                |  |
| 13. CLASSIFICATION OF MATERIALS (Description)                                      |  |  |                                      |  | 5-23-67                                      |  |
| 14. % CORE RECOVERY                                                                |  |  | 80                                   |  | 25. ELEVATION TOP OF HOLE                    |  |
| 15. BOX OF SAMPLE NO.                                                              |  |  | V-77                                 |  | -30.6                                        |  |
| 16. REMARKS (Drilling time, water loss, depth of overburden, etc., if significant) |  |  |                                      |  | 26. TOTAL CORE RECOVERY FOR BORING           |  |
| 17. SIGNATURE OF INSPECTOR                                                         |  |  | J. A. Albritton                      |  | 80 %                                         |  |
| 18. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | 27. SIGNATURE OF INSPECTOR                   |  |
| 19. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 20. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 21. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 22. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 23. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 24. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 25. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 26. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 27. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 28. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 29. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 30. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 31. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 32. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 33. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 34. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 35. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 36. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 37. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 38. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 39. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 40. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 41. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 42. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 43. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 44. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 45. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 46. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 47. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 48. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 49. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 50. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 51. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 52. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 53. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 54. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 55. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 56. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 57. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 58. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 59. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 60. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 61. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 62. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 63. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 64. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 65. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 66. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 67. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 68. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 69. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 70. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 71. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 72. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 73. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 74. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 75. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 76. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 77. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 78. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 79. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 80. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 81. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 82. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 83. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 84. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 85. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 86. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 87. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 88. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 89. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 90. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 91. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 92. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 93. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 94. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 95. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 96. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 97. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 98. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 99. SIGNATURE OF DRILLER                                                           |  |  |                                      |  | J. A. Albritton                              |  |
| 100. SIGNATURE OF DRILLER                                                          |  |  |                                      |  | J. A. Albritton                              |  |

V-78

| DRILLING LOG                                                                                                                  |       | LOCATION                                                            |                                              | INSTALLATION                                   |                   | SHEET                                                                                  |  |
|-------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------------------------------|----------------------------------------------|------------------------------------------------|-------------------|----------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                            |       | 2. LOCATION (Coordinates or Station)<br>SA, 10th A. S. Side         |                                              | 3. INSTALLATION<br>Savannah, GA.               |                   | 4. SHEET<br>1 OF 1 SHEETS                                                              |  |
| 5. LOCATION (Coordinates or Station)<br>SA, 10th A. S. Side                                                                   |       | 6. DRILLING AGENCY<br>Alpine Geophysical Asso.                      |                                              | 7. DATE AND TYPE OF BIT<br>1" I.D. sampler     |                   | 8. DATE FOR ELEVATION SHOWN (If applicable)                                            |  |
| 9. AL NO. (As shown on drawing note and file number)<br>V-78                                                                  |       | 10. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Geophysical Asso. |                                              | 11. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 |                   | 12. OVERBURDEN<br>0                                                                    |  |
| 13. NAME OF DRILLER<br>Al Stockel                                                                                             |       | 14. TOTAL NUMBER CORE CORIES<br>1 plastic tube                      |                                              | 15. ELEVATION CORRECTION MADE<br>Tide page 3.3 |                   | 16. DATE HOLE<br>STARTED 5-23-67<br>COMPLETED 5-23-67                                  |  |
| 17. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 18. ELEVATION TOP OF HOLE<br>-27.5                                  |                                              | 19. TOTAL CORE RECOVERY FOR BORING<br>100 %    |                   | 20. SIGNATURE OF INSPECTOR<br>J. A. Albritton                                          |  |
| 21. THICKNESS OF OVERBURDEN                                                                                                   |       | 22. DEPTH DRILLED INTO ROCK                                         |                                              | 23. TOTAL DEPTH OF HOLE<br>15.0                |                   | 24. REMARKS<br>(Drilling time, water level, depth of overburden, etc., if significant) |  |
| ELEVATION                                                                                                                     | DEPTH | LEGEND                                                              | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE RECOVERY                                | SOS OR SAMPLE NO. | REMARKS<br>(Drilling time, water level, depth of overburden, etc., if significant)     |  |
| -25.0                                                                                                                         |       |                                                                     |                                              |                                                |                   |                                                                                        |  |
| -30.0                                                                                                                         |       |                                                                     | ML-gray, soft silt                           | 100                                            | V-78              | Time<br>Sec./ft.                                                                       |  |
| -35.0                                                                                                                         |       |                                                                     | ML-soft, green silt.                         |                                                |                   | 0.3                                                                                    |  |
|                                                                                                                               |       |                                                                     | SM & ML-green, fine sand and silt.           |                                                |                   | 0.3                                                                                    |  |
| -40.0                                                                                                                         |       |                                                                     | ML-green, dense silt.                        |                                                |                   | 0.3                                                                                    |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 0.3                                                                                    |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 0.3                                                                                    |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 0.3                                                                                    |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 0.3                                                                                    |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 5.0                                                                                    |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 28.0                                                                                   |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 86.0                                                                                   |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 167.0                                                                                  |  |
|                                                                                                                               |       |                                                                     |                                              |                                                |                   | 160.0                                                                                  |  |
| Bottom of Hole -42.5<br>Note: Soils field classified in accordance with the Unified Soils Classification System.              |       |                                                                     |                                              |                                                |                   |                                                                                        |  |

| DRILLING LOG                                         |       | LOCATION                     |                                                                                   | DATE            |                   | SHEET                                                                          |  |
|------------------------------------------------------|-------|------------------------------|-----------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|--|
| South Atlantic                                       |       | Savannah, Ga.                |                                                                                   | V-79            |                   | 1                                                                              |  |
| Widening & Deepening Savannah Harbor                 |       | 3-1/2" ID Sampler            |                                                                                   | 1               |                   | 1                                                                              |  |
| Sta. 104, N. Side                                    |       | MLW                          |                                                                                   | 1               |                   | 1                                                                              |  |
| Alpine Geophysical Asso.                             |       | Alpine 20' Vibratory Sampler |                                                                                   | 1               |                   | 1                                                                              |  |
| HOLE NO. (As shown on drawing title and file number) |       | V-79                         |                                                                                   | 1               |                   | 1                                                                              |  |
| NAME OF DRAFTER                                      |       | Al Stockel                   |                                                                                   | 1               |                   | 1                                                                              |  |
| DIRECTION OF HOLE                                    |       | VERTICAL                     |                                                                                   | 1               |                   | 1                                                                              |  |
| THICKNESS OF OVERBURDEN                              |       | 5-23-67                      |                                                                                   | 1               |                   | 1                                                                              |  |
| DEPTH DRILLED INTO ROCK                              |       | 18.0'                        |                                                                                   | 1               |                   | 1                                                                              |  |
| TOTAL DEPTH OF HOLE                                  |       | 18.0'                        |                                                                                   | 1               |                   | 1                                                                              |  |
| SIGNATURE OF INSPECTOR                               |       | J. A. Albritton              |                                                                                   | 1               |                   | 1                                                                              |  |
| ELEVATION                                            | DEPTH | LEGEND                       | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY | LOT OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of overburden, etc., if significant) |  |
| -25.0                                                |       |                              | MH-Gray, soft silt.                                                               | 80              | V-79              | Time Sec/Ft                                                                    |  |
| -30.0                                                |       |                              | SM & MH-Gray, coarse sand and soft silt.                                          |                 |                   | 0.5                                                                            |  |
| -35.0                                                |       |                              | MH-Gray, soft silt.                                                               |                 |                   | 0.5                                                                            |  |
| -40.0                                                |       |                              | SM-Gray, medium to coarse grained, micaceous, silty sand.                         |                 |                   | 0.5                                                                            |  |
|                                                      |       |                              | SP-Tan, medium to coarse grained, micaceous sand.                                 |                 |                   | 0.5                                                                            |  |
|                                                      |       |                              | SM-Green, fine, silty sand.                                                       |                 |                   | 0.5                                                                            |  |
|                                                      |       |                              | ML-Green, dense, sandy silt.                                                      |                 |                   | 0.5                                                                            |  |
|                                                      |       |                              | BOTTOM OF HOLE -41.5'                                                             |                 |                   | 0.5                                                                            |  |
|                                                      |       |                              | Soils field classified in accordance with the Unified Soil Classification System. |                 |                   | 1.0                                                                            |  |
|                                                      |       |                              |                                                                                   |                 |                   | 2.0                                                                            |  |
|                                                      |       |                              |                                                                                   |                 |                   | 7.0                                                                            |  |
|                                                      |       |                              |                                                                                   |                 |                   | 5.0                                                                            |  |
|                                                      |       |                              |                                                                                   |                 |                   | 37.0                                                                           |  |
|                                                      |       |                              |                                                                                   |                 |                   | 118.0                                                                          |  |

| DRILLING LOG                                                                                                                  |       | Savannah Ga.                                                           |                                                                                   | SHEET 1 OF 1 SHEETS                           |                   |                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                            |       | 10. SIZE AND TYPE OF BIT<br>3-1/2" ID Sampler                          |                                                                                   |                                               |                   |                                                                                                           |
| 2. LOCATION (Coordinates or Station)<br>Sta. 103A, N. Side                                                                    |       | 11. DATUM FOR ELEVATION SHOWN (BENCHMARK, etc.)<br>MLW                 |                                                                                   |                                               |                   |                                                                                                           |
| 3. DRILLING AGENCY<br>Alpine Geophysical Asso.                                                                                |       | 12. MANUFACTURE'S DESIGNATION OF DRILL<br>Alpine 20" Vibratory Sampler |                                                                                   |                                               |                   |                                                                                                           |
| 4. HOLE NO. (As shown on drawing title and file number)<br>V-80                                                               |       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1 0                       |                                                                                   |                                               |                   |                                                                                                           |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                              |       | 14. TOTAL MUDMIX CORE HOLES<br>1 Plastic Tube                          |                                                                                   |                                               |                   |                                                                                                           |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEPT. FROM YIELD |       | 15. ELEVATION GROUND WATER<br>Tide Gage 1.7                            |                                                                                   |                                               |                   |                                                                                                           |
| 7. THICKNESS OF OVERBURDEN                                                                                                    |       | 16. DATE HOLE<br>5-23-67                                               |                                                                                   | 17. ELEVATION TOP OF HOLE<br>-26.3            |                   |                                                                                                           |
| 8. DEPTH DRILLED INTO ROCK                                                                                                    |       | 18. TOTAL CORE RECOVERY FOR BORING<br>89 %                             |                                                                                   | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton |                   |                                                                                                           |
| ELEVATION                                                                                                                     | DEPTH | LEGEND                                                                 | CLASSIFICATION OF MATERIALS (Description)                                         | % CORE RECOVERY                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                            |
| -25.0                                                                                                                         |       |                                                                        |                                                                                   |                                               |                   | Time Sec/Ft                                                                                               |
| -30.0                                                                                                                         |       |                                                                        | SP-Tan, fine to medium grained, micaceous sand with wood and plant fragments.     | 89                                            | V-80              | 1.0<br>0.5<br>0.5<br>1.0<br>1.0<br>2.0<br>4.0<br>7.0<br>5.0<br>5.0<br>6.0<br>7.0<br>14.0<br>72.0<br>106.0 |
| -35.0                                                                                                                         |       |                                                                        | SM-Green, fine to medium grained, silty sand.                                     |                                               |                   |                                                                                                           |
| -40.0                                                                                                                         |       |                                                                        | ML-Green, dense, sandy silt.                                                      |                                               |                   |                                                                                                           |
|                                                                                                                               |       |                                                                        | BOTTOM OF HOLE -44.3'                                                             |                                               |                   |                                                                                                           |
|                                                                                                                               |       |                                                                        | Soils field classified in accordance with the Unified Soil Classification System. |                                               |                   |                                                                                                           |

of core loss  
3 to 33.4

ONLY

FC

27

6V

107

133

168

Hole No. V-85A

| DRILLING LOG                                                                                                                 |       | SYSTEM        |                                                                                       | INSTALLATION                                                            |                   | SHEET                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|---------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------|--|
| South Atlantic                                                                                                               |       | Savannah, Ga. |                                                                                       | 1                                                                       |                   | 1                                                                               |  |
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                           |       |               |                                                                                       | 10. SIZE AND TYPE OF BIT<br>3-1/2" Vibratory Sampler                    |                   |                                                                                 |  |
| 2. LOCATION (Coordinates or Station)<br>Sta. 100, N. Side                                                                    |       |               |                                                                                       | 11. SURFACE FOR ELEVATION SHOWN (FRESHWATER, SEA, etc.)<br>MLW          |                   |                                                                                 |  |
| 3. DRILLING AGENCY<br>Alpine Geophysical Asso.                                                                               |       |               |                                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine 20' Vibratory Sampler |                   |                                                                                 |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>V-85A                                                             |       |               |                                                                                       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1                          |                   | 14. TOTAL NUMBER CORE ROWS<br>1 Plastic Tube                                    |  |
| 5. NAME OF DRILLER<br>Al Stockel                                                                                             |       |               |                                                                                       | 15. ELEVATION GROUND WATER<br>Tide Gage 8.0                             |                   | 16. DATE HOLE<br>5-24-67                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |               |                                                                                       | 17. ELEVATION TOP OF HOLE<br>-28.5'                                     |                   | 18. TOTAL CORE RECOVERY FOR BORING<br>79 %                                      |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |       |               |                                                                                       | 19. SIGNATURE OF INSPECTOR<br>J. A. Albritton                           |                   |                                                                                 |  |
| 8. DEPTH DRILLED INTO HOLE                                                                                                   |       |               |                                                                                       |                                                                         |                   |                                                                                 |  |
| 9. TOTAL DEPTH OF HOLE<br>14.0'                                                                                              |       |               |                                                                                       |                                                                         |                   |                                                                                 |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND        | CLASSIFICATION OF MATERIALS (Downpass)                                                | % CORE RECOVERY                                                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water level, depth of weathering, etc., if significant) |  |
| -25.0                                                                                                                        |       |               |                                                                                       |                                                                         |                   |                                                                                 |  |
| -30.0                                                                                                                        |       |               | SH-Gray, gravelley, silty, fine, micaceous sand with rotten wood and plant fragments. | 79                                                                      | V-85A             | Zone of Core Loss -28.5' to -39.5'                                              |  |
| -35.0                                                                                                                        |       |               | SP-Gray, fine to medium grained, slightly silty, micaceous sand.                      |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | SH-Dark gray, medium grained, silty sand.                                             |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | SP-Light gray, medium grained sand.                                                   |                                                                         |                   |                                                                                 |  |
| -40.0                                                                                                                        |       |               | SP-Tan, medium grained sand.                                                          |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | SH-Light green, fine to medium grained, silty sand                                    |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | ML-Green, dense, micaceous, plastic silt, grading toward a compacted shale            |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | BOTTOM OF HOLE -42.5'                                                                 |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | Soils field classified in accordance with the Unified Soil Classification System.     |                                                                         |                   |                                                                                 |  |
|                                                                                                                              |       |               | (Revised by Amendment No. 0001)                                                       |                                                                         |                   |                                                                                 |  |



Hole No. V-86

| DRILLING LOG                                                                                                              |            | DIVISION       | INSTALLATION                                                                                   |                         | SHEET                        |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------|------------|----------------|------------------------------------------------------------------------------------------------|-------------------------|------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                           |            | South Atlantic | Savannah, Ga.                                                                                  |                         | 1 of 1 SHEETS                |                                                                                         |
| 1. PROJECT<br>Widening & Deepening Savannah Harbor                                                                        |            |                | 10. SIZE AND TYPE OF BIT<br>7 1/2" ID Sammler                                                  |                         |                              |                                                                                         |
| 2. LOCATION (Coordinates or Station)<br>TA. 98, N. Side                                                                   |            |                | 11. SURVEY FOR ELEVATION SHOWN (TYPE OF REEF)<br>MHW                                           |                         |                              |                                                                                         |
| 3. TESTING AGENCY<br>Alpine Geophysical Asso.                                                                             |            |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine 20" Vibratory Sammler                        |                         |                              |                                                                                         |
| 4. HOLE NO. (As shown on drawing title and file number)<br>V-86                                                           |            |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>1                                                 |                         | UNDESIRABLE<br>0             |                                                                                         |
| 5. NAME OF DRILLER<br>AT Stockel                                                                                          |            |                | 14. TOTAL NUMBER CORE WORES<br>1 plastic liner                                                 |                         |                              |                                                                                         |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED<br>DIP, FROM VERT. |            |                | 15. ELEVATION GROUND WATER<br>Tide gage                                                        |                         |                              |                                                                                         |
| 7. THICKNESS OF OVERBURDEN                                                                                                |            |                | 16. DATE HOLE<br>5-24-67                                                                       |                         | COMPLETED<br>5-24-67         |                                                                                         |
| 8. DEPTH DRILLED INTO ROCK                                                                                                |            |                | 17. ELEVATION TOP OF HOLE<br>-32.5                                                             |                         |                              |                                                                                         |
| 9. TOTAL DEPTH OF HOLE<br>11.0'                                                                                           |            |                | 18. TOTAL CORE RECOVERY FOR BORING<br>80%                                                      |                         |                              |                                                                                         |
|                                                                                                                           |            |                | 19. SIGNATURE OF INSPECTOR<br>J. A. Albrighton                                                 |                         |                              |                                                                                         |
| ELEVATION<br>a                                                                                                            | DEPTH<br>b | LOGGING<br>c   | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                              | % CORE<br>RECOVERY<br>e | BOX OF<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>unboring, etc., if significant)<br>g |
| -30.0                                                                                                                     |            |                |                                                                                                |                         |                              | Time<br>Sec./ft.                                                                        |
| -35.0                                                                                                                     |            |                | OH-black, soft, organic silt                                                                   |                         |                              | 0.5                                                                                     |
|                                                                                                                           |            |                | SH-gray, medium grained,<br>micaceous, silty sand.                                             |                         |                              | 0.5                                                                                     |
|                                                                                                                           |            |                | SP-tan, medium grained,<br>micaceous sand                                                      | 80                      | V-86                         | 0.5                                                                                     |
| -40.0                                                                                                                     |            |                | SH-Green, fine silty sand                                                                      |                         |                              | 0.5                                                                                     |
|                                                                                                                           |            |                | ML-Green, dense, plastic silt,<br>grading toward a compaction shale                            |                         |                              | 1.0                                                                                     |
|                                                                                                                           |            |                | Bottom-of-Hole 43.5                                                                            |                         |                              | 1.0                                                                                     |
|                                                                                                                           |            |                | Note: Soils field classified<br>in accordance with the Unified<br>Soils Classification System. |                         |                              | 12.0                                                                                    |
|                                                                                                                           |            |                |                                                                                                |                         |                              | 343.0                                                                                   |
| (Revised by Amendment No. 0001)                                                                                           |            |                |                                                                                                |                         |                              |                                                                                         |



# SAVANNAH HARBOR BORING LOGS

From Station 70+000

To

Station 79+000

Hole No. SH-30

| DRILLING LOG                                                                                                                 |       | DIVISION       | INSTALLATION                                                                                  |                         | SHEET 1<br>OF 2 SHEETS  |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       | South Atlantic | Savannah, GA                                                                                  |                         |                         |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 77+000N, R= "31" (X-832180<br>Y-759915)                                 |       |                | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon                                              |                         |                         |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                | 11. DATUM FOR ELEVATION SHOWN (TSB or MSL)<br>MLW                                             |                         |                         |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SR-30                                                             |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>GME 75                                             |                         |                         |                                                                                                     |
| 5. NAME OF DRILLER<br>Perry Roundtree                                                                                        |       |                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                |                         | DISTURBED<br>5          | UNDISTURBED<br>0                                                                                    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. TOTAL NUMBER CORE BOXES                                                                   |                         |                         |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN<br>55.5'                                                                                          |       |                | 15. ELEVATION GROUND WATER                                                                    |                         |                         |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                | 16. DATE HOLE<br>STARTED<br>17 Nov 77                                                         |                         | COMPLETED<br>17 Nov 77  |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE<br>-55.5'                                                                                             |       |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                          |                         |                         |                                                                                                     |
|                                                                                                                              |       |                | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                       |                         |                         |                                                                                                     |
|                                                                                                                              |       |                | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                              |                         |                         |                                                                                                     |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| 0.0 MLW                                                                                                                      | 0'    | c              | d                                                                                             | e                       | f                       | g                                                                                                   |
|                                                                                                                              | 5'    |                | Water                                                                                         |                         |                         |                                                                                                     |
|                                                                                                                              | 10'   |                |                                                                                               |                         |                         |                                                                                                     |
|                                                                                                                              | 15'   |                |                                                                                               |                         |                         |                                                                                                     |
|                                                                                                                              | 20'   |                |                                                                                               |                         |                         |                                                                                                     |
|                                                                                                                              | 25'   |                |                                                                                               |                         |                         |                                                                                                     |
| -30.0                                                                                                                        | 30'   |                | Continued on sheet 2                                                                          |                         |                         |                                                                                                     |
|                                                                                                                              |       |                | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. | B1-34                   |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |

| DRILLING LOG (Cont Sheet) |                   |             |                                                   |                              |                              |                                                                                           |
|---------------------------|-------------------|-------------|---------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT                   |                   |             | LOCATION TOP OF HOLE                              |                              | Hole No.                     |                                                                                           |
| Savannah Harbor           |                   |             | 0.0 MLW                                           |                              | SH-30                        |                                                                                           |
| INSTALLATION              |                   |             | Savannah, GA                                      |                              | SHEET 2 OF 2 SHEETS          |                                                                                           |
| ELEVATION<br>a            | DEPTH<br>30'<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
| -31.5                     |                   |             | Water<br>Bottom of river -31.5'                   |                              | JAR                          | Blows                                                                                     |
|                           |                   |             | OL - Black organic silt                           |                              | 1                            | 0                                                                                         |
| -35.5                     | 35'               |             |                                                   |                              |                              | 0                                                                                         |
|                           |                   |             | SC - Gray clayey sand                             |                              | 2                            | 4                                                                                         |
| -40.0                     | 40'               |             |                                                   |                              |                              | 12                                                                                        |
|                           |                   |             | CL - Green silty clay                             |                              | 3                            | 14                                                                                        |
|                           |                   |             |                                                   |                              |                              | 19                                                                                        |
| -45.0                     | 45'               |             |                                                   |                              |                              | 21                                                                                        |
|                           |                   |             | MH - Green fat clayey silt                        |                              | 4                            | 23                                                                                        |
|                           |                   |             |                                                   |                              |                              | 26                                                                                        |
|                           |                   |             |                                                   |                              |                              | 44                                                                                        |
|                           | 50'               |             |                                                   |                              | 5                            | 6                                                                                         |
|                           |                   |             |                                                   |                              |                              | 79                                                                                        |
|                           |                   |             |                                                   |                              |                              | 90                                                                                        |
|                           |                   |             |                                                   |                              |                              | 100/0.5                                                                                   |
| -55.5                     | 55'               |             |                                                   |                              |                              | 97                                                                                        |
|                           |                   |             | Bottom of hole -55.5' MLW                         |                              |                              | 100                                                                                       |

Hole No. SH-31

| DRILLING LOG                                                                                                                 |       | DIVISION       | INSTALLATION                                                                            |                         | SHEET 1<br>OF 2 SHEETS  |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       | South Atlantic | Savannah, GA                                                                            |                         |                         |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>Sta 76+000N, R=130" (X-833000 Y-759415)                                              |       |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                           |                         |                         |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or AGL)<br>MLW                                       |                         |                         |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-31                                                             |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Henwood                          |                         |                         |                                                                                                     |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |       |                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                          |                         | DISTURBED<br>9          | UNDISTURBED<br>0                                                                                    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. TOTAL NUMBER CORE BOXES                                                             |                         |                         |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN<br>55.5'                                                                                          |       |                | 15. ELEVATION GROUND WATER                                                              |                         |                         |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                | 16. DATE HOLE<br>STARTED 30 Oct 77 COMPLETED 30 Oct 77                                  |                         |                         |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE<br>-55.5' MLW                                                                                         |       |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                    |                         |                         |                                                                                                     |
|                                                                                                                              |       |                | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                 |                         |                         |                                                                                                     |
|                                                                                                                              |       |                | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                        |                         |                         |                                                                                                     |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| 0.0 MLW                                                                                                                      | 0'    | c              |                                                                                         |                         |                         |                                                                                                     |
|                                                                                                                              | 5'    |                | Water                                                                                   |                         |                         |                                                                                                     |
|                                                                                                                              | 9.0   |                | Bottom of river -9.0'                                                                   |                         | JAR                     | BLOWS                                                                                               |
|                                                                                                                              | 10'   |                | SM - Greenish gray fine silty sand and soft silt mixture                                |                         | 1                       | 6                                                                                                   |
|                                                                                                                              | 15'   |                | Gray and tan, fine and medium silty sand                                                |                         | 2                       | 7                                                                                                   |
|                                                                                                                              | 18.0  |                | SM - Gray soft fat clayey silt                                                          |                         | 3                       | 7                                                                                                   |
|                                                                                                                              | 19.5  |                | SM - Tan and gray silty fine and medium sand                                            |                         | 4                       | 9                                                                                                   |
|                                                                                                                              | 23.0  |                | SC - Gray clayey fine sand                                                              |                         | 5                       | 25                                                                                                  |
|                                                                                                                              | 25'   |                |                                                                                         |                         |                         | 27                                                                                                  |
|                                                                                                                              | 27.0  |                | SM - Green fine cemented silty sand, very hard                                          |                         | 6                       | 26                                                                                                  |
|                                                                                                                              | 30.0  |                | Continued on sheet 2                                                                    |                         |                         | 28                                                                                                  |
|                                                                                                                              |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                         |                         | 32                                                                                                  |
|                                                                                                                              |       |                |                                                                                         |                         |                         | 28                                                                                                  |
|                                                                                                                              |       |                |                                                                                         |                         |                         | 100/0.5                                                                                             |
|                                                                                                                              |       |                |                                                                                         |                         |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |

| DRILLING LOG (Cont Sheet) |                   | ATION TOP OF HOLE |                                                                      | 0.0 MLW                      |                              | Hole No. SH-31                                                                                   |    |         |
|---------------------------|-------------------|-------------------|----------------------------------------------------------------------|------------------------------|------------------------------|--------------------------------------------------------------------------------------------------|----|---------|
| PROJECT                   |                   |                   | INSTALLATION                                                         |                              |                              | SHEET 2 OF 2 SHEETS                                                                              |    |         |
| ELEVATION<br>a            | DEPTH<br>30'<br>b | LEGEND<br>c       | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                    | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant).<br>g BLOWS |    |         |
|                           |                   |                   | SM - Green fine cemented<br>silty sand                               |                              |                              |                                                                                                  | 79 |         |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 97      |
|                           | 35'               |                   |                                                                      |                              |                              | 7                                                                                                |    | 100/0.7 |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 95      |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 100     |
|                           | 40'               |                   |                                                                      |                              |                              |                                                                                                  |    | 100/0.3 |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 99      |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 100/0.8 |
|                           | 45'               |                   |                                                                      |                              |                              | 8                                                                                                |    | 95      |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 100/0.5 |
|                           |                   |                   | MH - Dark green fine sandy<br>and clayey silt with traces<br>of mica |                              | 9                            |                                                                                                  | 96 |         |
| -51.0                     | 50'               |                   |                                                                      |                              |                              |                                                                                                  |    | 90      |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 94      |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 77      |
|                           |                   |                   |                                                                      |                              |                              |                                                                                                  |    | 88      |
| -55.5                     | 55'               |                   |                                                                      |                              |                              |                                                                                                  |    | 63      |
|                           |                   |                   | Bottom of hole -55.5' MLW                                            |                              |                              |                                                                                                  | 66 |         |

| DRILLING LOG                                                                                         |       | DIVISION       |                                                                                         | INSTALLATION                                  |                   | Hole No. SH-32                                                                              |  |
|------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------|-----------------------------------------------|-------------------|---------------------------------------------------------------------------------------------|--|
| PROJECT                                                                                              |       | South Atlantic |                                                                                         | Savannah, GA                                  |                   | SHEET 1 OF 2 SHEETS                                                                         |  |
| Savannah Harbor                                                                                      |       |                |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon |                   |                                                                                             |  |
| 2. LOCATION (Coordinates or Station)                                                                 |       |                |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)    |                   |                                                                                             |  |
| Sta 72+000N, R=127"                                                                                  |       |                |                                                                                         | MLW                                           |                   |                                                                                             |  |
| 3. DRILLING AGENCY                                                                                   |       |                |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL       |                   |                                                                                             |  |
| Savannah District                                                                                    |       |                |                                                                                         | CME 75                                        |                   |                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                              |       | SH-32          |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN    |                   | DISTURBED 5 UNDISTURBED 0                                                                   |  |
| 5. NAME OF DRILLER                                                                                   |       |                |                                                                                         | 14. TOTAL NUMBER CORE BOXES                   |                   |                                                                                             |  |
| Perry Rountree                                                                                       |       |                |                                                                                         | 15. ELEVATION GROUND WATER                    |                   |                                                                                             |  |
| 6. DIRECTION OF HOLE                                                                                 |       |                |                                                                                         | 16. DATE HOLE                                 |                   | STARTED 16 Nov 77 COMPLETED 16 Nov 77                                                       |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                         | 17. ELEVATION TOP OF HOLE                     |                   | 0.0 MLW                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN                                                                           |       | 56.0'          |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING            |                   | %                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK                                                                           |       | 0.0'           |                                                                                         | 19. SIGNATURE OF INSPECTOR                    |                   | CHARLES D. GRIFFIN                                                                          |  |
| 9. TOTAL DEPTH OF HOLE                                                                               |       | -56.0' MLW     |                                                                                         |                                               |                   |                                                                                             |  |
| ELEVATION                                                                                            | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                               | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)              |  |
| 0.0 MLW                                                                                              | 0.0'  | c              | d                                                                                       | e                                             | f                 | g                                                                                           |  |
|                                                                                                      | 5'    |                | Water                                                                                   |                                               |                   |                                                                                             |  |
|                                                                                                      | 10'   |                |                                                                                         |                                               |                   |                                                                                             |  |
|                                                                                                      | 15'   |                |                                                                                         |                                               |                   |                                                                                             |  |
|                                                                                                      | 20'   |                |                                                                                         |                                               |                   |                                                                                             |  |
|                                                                                                      | 25'   |                |                                                                                         |                                               |                   |                                                                                             |  |
| -30.0                                                                                                | 30'   |                | Continued on sheet 2                                                                    |                                               |                   |                                                                                             |  |
|                                                                                                      |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                               |                   | BLOWS PER FOOT:<br>Number required to drive 3/8" ID splitspoon w/ 140 lb hammer falling 30" |  |

| DRILLING LOG (Cont Sheet) |  | LOCATION TOP OF HOLE |  | Hole No.     |  | SH-32                                                                  |  |
|---------------------------|--|----------------------|--|--------------|--|------------------------------------------------------------------------|--|
| PROJECT                   |  | Savannah Harbor      |  | INSTALLATION |  | Savannah, GA                                                           |  |
| ELEVATION                 |  | DEPTH                |  | LEGEND       |  | CLASSIFICATION OF MATERIALS                                            |  |
| a                         |  | b                    |  | c            |  | d                                                                      |  |
|                           |  |                      |  |              |  | REMARKS                                                                |  |
|                           |  |                      |  |              |  | (Drilling time, water lost, depth of weathering, etc., if significant) |  |
|                           |  |                      |  |              |  | e                                                                      |  |
|                           |  |                      |  |              |  | f                                                                      |  |
|                           |  |                      |  |              |  | g                                                                      |  |
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|                           |  |                      |  |              |  | s                                                                      |  |
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|                           |  |                      |  |              |  | y                                                                      |  |
|                           |  |                      |  |              |  | z                                                                      |  |
|                           |  |                      |  |              |  | aa                                                                     |  |
|                           |  |                      |  |              |  | ab                                                                     |  |
|                           |  |                      |  |              |  | ac                                                                     |  |
|                           |  |                      |  |              |  | ad                                                                     |  |
|                           |  |                      |  |              |  | ae                                                                     |  |
|                           |  |                      |  |              |  | af                                                                     |  |
|                           |  |                      |  |              |  | ag                                                                     |  |
|                           |  |                      |  |              |  | ah                                                                     |  |
|                           |  |                      |  |              |  | ai                                                                     |  |
|                           |  |                      |  |              |  | aj                                                                     |  |
|                           |  |                      |  |              |  | ak                                                                     |  |
|                           |  |                      |  |              |  | al                                                                     |  |
|                           |  |                      |  |              |  | am                                                                     |  |
|                           |  |                      |  |              |  | an                                                                     |  |
|                           |  |                      |  |              |  | ao                                                                     |  |
|                           |  |                      |  |              |  | ap                                                                     |  |
|                           |  |                      |  |              |  | aq                                                                     |  |
|                           |  |                      |  |              |  | ar                                                                     |  |
|                           |  |                      |  |              |  | as                                                                     |  |
|                           |  |                      |  |              |  | at                                                                     |  |
|                           |  |                      |  |              |  | au                                                                     |  |
|                           |  |                      |  |              |  | av                                                                     |  |
|                           |  |                      |  |              |  | aw                                                                     |  |
|                           |  |                      |  |              |  | ax                                                                     |  |
|                           |  |                      |  |              |  | ay                                                                     |  |
|                           |  |                      |  |              |  | az                                                                     |  |
|                           |  |                      |  |              |  | ba                                                                     |  |
|                           |  |                      |  |              |  | bb                                                                     |  |
|                           |  |                      |  |              |  | bc                                                                     |  |
|                           |  |                      |  |              |  | bd                                                                     |  |
|                           |  |                      |  |              |  | be                                                                     |  |
|                           |  |                      |  |              |  | bf                                                                     |  |
|                           |  |                      |  |              |  | bg                                                                     |  |
|                           |  |                      |  |              |  | bh                                                                     |  |
|                           |  |                      |  |              |  | bi                                                                     |  |
|                           |  |                      |  |              |  | bj                                                                     |  |
|                           |  |                      |  |              |  | bk                                                                     |  |
|                           |  |                      |  |              |  | bl                                                                     |  |
|                           |  |                      |  |              |  | bm                                                                     |  |
|                           |  |                      |  |              |  | bn                                                                     |  |
|                           |  |                      |  |              |  | bo                                                                     |  |
|                           |  |                      |  |              |  | bp                                                                     |  |
|                           |  |                      |  |              |  | bq                                                                     |  |
|                           |  |                      |  |              |  | br                                                                     |  |
|                           |  |                      |  |              |  | bs                                                                     |  |
|                           |  |                      |  |              |  | bt                                                                     |  |
|                           |  |                      |  |              |  | bu                                                                     |  |
|                           |  |                      |  |              |  | bv                                                                     |  |
|                           |  |                      |  |              |  | bw                                                                     |  |
|                           |  |                      |  |              |  | bx                                                                     |  |
|                           |  |                      |  |              |  | by                                                                     |  |
|                           |  |                      |  |              |  | bz                                                                     |  |
|                           |  |                      |  |              |  | ca                                                                     |  |
|                           |  |                      |  |              |  | cb                                                                     |  |
|                           |  |                      |  |              |  | cc                                                                     |  |
|                           |  |                      |  |              |  | cd                                                                     |  |
|                           |  |                      |  |              |  | ce                                                                     |  |
|                           |  |                      |  |              |  | cf                                                                     |  |
|                           |  |                      |  |              |  | cg                                                                     |  |
|                           |  |                      |  |              |  | ch                                                                     |  |
|                           |  |                      |  |              |  | ci                                                                     |  |
|                           |  |                      |  |              |  | cj                                                                     |  |
|                           |  |                      |  |              |  | ck                                                                     |  |
|                           |  |                      |  |              |  | cl                                                                     |  |
|                           |  |                      |  |              |  | cm                                                                     |  |
|                           |  |                      |  |              |  | cn                                                                     |  |
|                           |  |                      |  |              |  | co                                                                     |  |
|                           |  |                      |  |              |  | cp                                                                     |  |
|                           |  |                      |  |              |  | cq                                                                     |  |
|                           |  |                      |  |              |  | cr                                                                     |  |
|                           |  |                      |  |              |  | cs                                                                     |  |
|                           |  |                      |  |              |  | ct                                                                     |  |
|                           |  |                      |  |              |  | cu                                                                     |  |
|                           |  |                      |  |              |  | cv                                                                     |  |
|                           |  |                      |  |              |  | cw                                                                     |  |
|                           |  |                      |  |              |  | cx                                                                     |  |
|                           |  |                      |  |              |  | cy                                                                     |  |
|                           |  |                      |  |              |  | cz                                                                     |  |
|                           |  |                      |  |              |  | da                                                                     |  |
|                           |  |                      |  |              |  | db                                                                     |  |
|                           |  |                      |  |              |  | dc                                                                     |  |
|                           |  |                      |  |              |  | dd                                                                     |  |
|                           |  |                      |  |              |  | de                                                                     |  |
|                           |  |                      |  |              |  | df                                                                     |  |
|                           |  |                      |  |              |  | dg                                                                     |  |
|                           |  |                      |  |              |  | dh                                                                     |  |
|                           |  |                      |  |              |  | di                                                                     |  |
|                           |  |                      |  |              |  | dj                                                                     |  |
|                           |  |                      |  |              |  | dk                                                                     |  |
|                           |  |                      |  |              |  | dl                                                                     |  |
|                           |  |                      |  |              |  | dm                                                                     |  |
|                           |  |                      |  |              |  | dn                                                                     |  |
|                           |  |                      |  |              |  | do                                                                     |  |
|                           |  |                      |  |              |  | dp                                                                     |  |
|                           |  |                      |  |              |  | dq                                                                     |  |
|                           |  |                      |  |              |  | dr                                                                     |  |
|                           |  |                      |  |              |  | ds                                                                     |  |
|                           |  |                      |  |              |  | dt                                                                     |  |
|                           |  |                      |  |              |  | du                                                                     |  |
|                           |  |                      |  |              |  | dv                                                                     |  |
|                           |  |                      |  |              |  | dw                                                                     |  |
|                           |  |                      |  |              |  | dx                                                                     |  |
|                           |  |                      |  |              |  | dy                                                                     |  |
|                           |  |                      |  |              |  | dz                                                                     |  |
|                           |  |                      |  |              |  | ea                                                                     |  |
|                           |  |                      |  |              |  | eb                                                                     |  |
|                           |  |                      |  |              |  | ec                                                                     |  |
|                           |  |                      |  |              |  | ed                                                                     |  |
|                           |  |                      |  |              |  | ee                                                                     |  |
|                           |  |                      |  |              |  | ef                                                                     |  |
|                           |  |                      |  |              |  | eg                                                                     |  |
|                           |  |                      |  |              |  | eh                                                                     |  |
|                           |  |                      |  |              |  | ei                                                                     |  |
|                           |  |                      |  |              |  | ej                                                                     |  |
|                           |  |                      |  |              |  | ek                                                                     |  |
|                           |  |                      |  |              |  | el                                                                     |  |
|                           |  |                      |  |              |  | em                                                                     |  |
|                           |  |                      |  |              |  | en                                                                     |  |
|                           |  |                      |  |              |  | eo                                                                     |  |
|                           |  |                      |  |              |  | ep                                                                     |  |
|                           |  |                      |  |              |  | eq                                                                     |  |
|                           |  |                      |  |              |  | er                                                                     |  |
|                           |  |                      |  |              |  | es                                                                     |  |
|                           |  |                      |  |              |  | et                                                                     |  |
|                           |  |                      |  |              |  | eu                                                                     |  |
|                           |  |                      |  |              |  | ev                                                                     |  |
|                           |  |                      |  |              |  | ew                                                                     |  |
|                           |  |                      |  |              |  | ex                                                                     |  |
|                           |  |                      |  |              |  | ey                                                                     |  |
|                           |  |                      |  |              |  | ez                                                                     |  |
|                           |  |                      |  |              |  | fa                                                                     |  |
|                           |  |                      |  |              |  | fb                                                                     |  |
|                           |  |                      |  |              |  | fc                                                                     |  |
|                           |  |                      |  |              |  | fd                                                                     |  |
|                           |  |                      |  |              |  | fe                                                                     |  |
|                           |  |                      |  |              |  | ff                                                                     |  |
|                           |  |                      |  |              |  | fg                                                                     |  |
|                           |  |                      |  |              |  | fh                                                                     |  |
|                           |  |                      |  |              |  | fi                                                                     |  |
|                           |  |                      |  |              |  | fj                                                                     |  |
|                           |  |                      |  |              |  | fk                                                                     |  |
|                           |  |                      |  |              |  | fl                                                                     |  |
|                           |  |                      |  |              |  | fm                                                                     |  |
|                           |  |                      |  |              |  | fn                                                                     |  |
|                           |  |                      |  |              |  | fo                                                                     |  |
|                           |  |                      |  |              |  | fp                                                                     |  |
|                           |  |                      |  |              |  | fq                                                                     |  |
|                           |  |                      |  |              |  | fr                                                                     |  |
|                           |  |                      |  |              |  | fs                                                                     |  |
|                           |  |                      |  |              |  | ft                                                                     |  |
|                           |  |                      |  |              |  | fu                                                                     |  |
|                           |  |                      |  |              |  | fv                                                                     |  |
|                           |  |                      |  |              |  | fw                                                                     |  |
|                           |  |                      |  |              |  | fx                                                                     |  |
|                           |  |                      |  |              |  | fy                                                                     |  |
|                           |  |                      |  |              |  | fz                                                                     |  |
|                           |  |                      |  |              |  | ga                                                                     |  |
|                           |  |                      |  |              |  | gb                                                                     |  |
|                           |  |                      |  |              |  | gc                                                                     |  |
|                           |  |                      |  |              |  | gd                                                                     |  |
|                           |  |                      |  |              |  | ge                                                                     |  |
|                           |  |                      |  |              |  | gf                                                                     |  |
|                           |  |                      |  |              |  | gg                                                                     |  |
|                           |  |                      |  |              |  | gh                                                                     |  |
|                           |  |                      |  |              |  | gi                                                                     |  |
|                           |  |                      |  |              |  | gj                                                                     |  |
|                           |  |                      |  |              |  | gk                                                                     |  |
|                           |  |                      |  |              |  | gl                                                                     |  |
|                           |  |                      |  |              |  | gm                                                                     |  |
|                           |  |                      |  |              |  | gn                                                                     |  |
|                           |  |                      |  |              |  | go                                                                     |  |
|                           |  |                      |  |              |  | gp                                                                     |  |
|                           |  |                      |  |              |  | gq                                                                     |  |
|                           |  |                      |  |              |  | gr                                                                     |  |
|                           |  |                      |  |              |  | gs                                                                     |  |
|                           |  |                      |  |              |  | gt                                                                     |  |
|                           |  |                      |  |              |  | gu                                                                     |  |
|                           |  |                      |  |              |  | gv                                                                     |  |
|                           |  |                      |  |              |  | gw                                                                     |  |
|                           |  |                      |  |              |  | gx                                                                     |  |
|                           |  |                      |  |              |  | gy                                                                     |  |
|                           |  |                      |  |              |  | gz                                                                     |  |
|                           |  |                      |  |              |  | ha                                                                     |  |
|                           |  |                      |  |              |  | hb                                                                     |  |
|                           |  |                      |  |              |  | hc                                                                     |  |
|                           |  |                      |  |              |  | hd                                                                     |  |
|                           |  |                      |  |              |  | he                                                                     |  |
|                           |  |                      |  |              |  | hf                                                                     |  |
|                           |  |                      |  |              |  | hg                                                                     |  |
|                           |  |                      |  |              |  | hh                                                                     |  |
|                           |  |                      |  |              |  | hi                                                                     |  |
|                           |  |                      |  |              |  | hj                                                                     |  |
|                           |  |                      |  |              |  | hk                                                                     |  |
|                           |  |                      |  |              |  | hl                                                                     |  |
|                           |  |                      |  |              |  | hm                                                                     |  |
|                           |  |                      |  |              |  | hn                                                                     |  |
|                           |  |                      |  |              |  | ho                                                                     |  |
|                           |  |                      |  |              |  | hp                                                                     |  |
|                           |  |                      |  |              |  | hq                                                                     |  |
|                           |  |                      |  |              |  | hr                                                                     |  |
|                           |  |                      |  |              |  | hs                                                                     |  |
|                           |  |                      |  |              |  | ht                                                                     |  |
|                           |  |                      |  |              |  | hu                                                                     |  |
|                           |  |                      |  |              |  | hv                                                                     |  |
|                           |  |                      |  |              |  | hw                                                                     |  |
|                           |  |                      |  |              |  | hx                                                                     |  |
|                           |  |                      |  |              |  | hy                                                                     |  |
|                           |  |                      |  |              |  | hz                                                                     |  |
|                           |  |                      |  |              |  | ia                                                                     |  |
|                           |  |                      |  |              |  | ib                                                                     |  |
|                           |  |                      |  |              |  | ic                                                                     |  |
|                           |  |                      |  |              |  | id                                                                     |  |
|                           |  |                      |  |              |  | ie                                                                     |  |
|                           |  |                      |  |              |  | if                                                                     |  |
|                           |  |                      |  |              |  | ig                                                                     |  |
|                           |  |                      |  |              |  | ih                                                                     |  |
|                           |  |                      |  |              |  | ii                                                                     |  |
|                           |  |                      |  |              |  | ij                                                                     |  |
|                           |  |                      |  |              |  | ik                                                                     |  |
|                           |  |                      |  |              |  | il                                                                     |  |
|                           |  |                      |  |              |  | im                                                                     |  |
|                           |  |                      |  |              |  | in                                                                     |  |
|                           |  |                      |  |              |  | io                                                                     |  |
|                           |  |                      |  |              |  | ip                                                                     |  |
|                           |  |                      |  |              |  | iq                                                                     |  |
|                           |  |                      |  |              |  | ir                                                                     |  |
|                           |  |                      |  |              |  | is                                                                     |  |
|                           |  |                      |  |              |  | it                                                                     |  |
|                           |  |                      |  |              |  | iu                                                                     |  |
|                           |  |                      |  |              |  | iv                                                                     |  |
|                           |  |                      |  |              |  | iw                                                                     |  |
|                           |  |                      |  |              |  | ix                                                                     |  |
|                           |  |                      |  |              |  | iy                                                                     |  |
|                           |  |                      |  |              |  | iz                                                                     |  |
|                           |  |                      |  |              |  | ja                                                                     |  |
|                           |  |                      |  |              |  | jb                                                                     |  |
|                           |  |                      |  |              |  | jc                                                                     |  |
|                           |  |                      |  |              |  | jd                                                                     |  |
|                           |  |                      |  |              |  | je                                                                     |  |
|                           |  |                      |  |              |  | jf                                                                     |  |
|                           |  |                      |  |              |  | jg                                                                     |  |
|                           |  |                      |  |              |  | jh                                                                     |  |
|                           |  |                      |  |              |  | ji                                                                     |  |
|                           |  |                      |  |              |  | jj                                                                     |  |
|                           |  |                      |  |              |  | jk                                                                     |  |
|                           |  |                      |  |              |  | jl                                                                     |  |
|                           |  |                      |  |              |  | jm                                                                     |  |
|                           |  |                      |  |              |  | jn                                                                     |  |
|                           |  |                      |  |              |  | jo                                                                     |  |
|                           |  |                      |  |              |  | jp                                                                     |  |
|                           |  |                      |  |              |  | jq                                                                     |  |
|                           |  |                      |  |              |  | jr                                                                     |  |
|                           |  |                      |  |              |  | js                                                                     |  |
|                           |  |                      |  |              |  | jt                                                                     |  |
|                           |  |                      |  |              |  | ju                                                                     |  |
|                           |  |                      |  |              |  | jv                                                                     |  |
|                           |  |                      |  |              |  | jw                                                                     |  |
|                           |  |                      |  |              |  | jx                                                                     |  |
|                           |  |                      |  |              |  | jy                                                                     |  |
|                           |  |                      |  |              |  | jz                                                                     |  |
|                           |  |                      |  |              |  | ka                                                                     |  |
|                           |  |                      |  |              |  | kb                                                                     |  |
|                           |  |                      |  |              |  | kc                                                                     |  |
|                           |  |                      |  |              |  | kd                                                                     |  |
|                           |  |                      |  |              |  | ke                                                                     |  |
|                           |  |                      |  |              |  | kf                                                                     |  |
|                           |  |                      |  |              |  | kg                                                                     |  |
|                           |  |                      |  |              |  | kh                                                                     |  |
|                           |  |                      |  |              |  | ki                                                                     |  |
|                           |  |                      |  |              |  | kj                                                                     |  |
|                           |  |                      |  |              |  | kk                                                                     |  |
|                           |  |                      |  |              |  | kl                                                                     |  |
|                           |  |                      |  |              |  | km                                                                     |  |
|                           |  |                      |  |              |  | kn                                                                     |  |
|                           |  |                      |  |              |  | ko                                                                     |  |
|                           |  |                      |  |              |  | kp                                                                     |  |
|                           |  |                      |  |              |  | kq                                                                     |  |
|                           |  |                      |  |              |  | kr                                                                     |  |
|                           |  |                      |  |              |  | ks                                                                     |  |
|                           |  |                      |  |              |  | kt                                                                     |  |
|                           |  |                      |  |              |  | ku                                                                     |  |
|                           |  |                      |  |              |  | kv                                                                     |  |
|                           |  |                      |  |              |  | kw                                                                     |  |
|                           |  |                      |  |              |  | kx                                                                     |  |
|                           |  |                      |  |              |  | ky                                                                     |  |
|                           |  |                      |  |              |  | kz                                                                     |  |
|                           |  |                      |  |              |  | la                                                                     |  |
|                           |  |                      |  |              |  | lb                                                                     |  |
|                           |  |                      |  |              |  | lc                                                                     |  |
|                           |  |                      |  |              |  | ld                                                                     |  |
|                           |  |                      |  |              |  | le                                                                     |  |
|                           |  |                      |  |              |  | lf                                                                     |  |
|                           |  |                      |  |              |  | lg                                                                     |  |
|                           |  |                      |  |              |  | lh                                                                     |  |
|                           |  |                      |  |              |  | li                                                                     |  |
|                           |  |                      |  |              |  | lj                                                                     |  |
|                           |  |                      |  |              |  | lk                                                                     |  |
|                           |  |                      |  |              |  | ll                                                                     |  |
|                           |  |                      |  |              |  | lm                                                                     |  |
|                           |  |                      |  |              |  | ln                                                                     |  |
|                           |  |                      |  |              |  | lo                                                                     |  |
|                           |  |                      |  |              |  | lp                                                                     |  |
|                           |  |                      |  |              |  | lq                                                                     |  |
|                           |  |                      |  |              |  | lr                                                                     |  |
|                           |  |                      |  |              |  | ls                                                                     |  |
|                           |  |                      |  |              |  | lt                                                                     |  |
|                           |  |                      |  |              |  | lu                                                                     |  |
|                           |  |                      |  |              |  | lv                                                                     |  |
|                           |  |                      |  |              |  | lw                                                                     |  |
|                           |  |                      |  |              |  | lx                                                                     |  |
|                           |  |                      |  |              |  | ly                                                                     |  |
|                           |  |                      |  |              |  | lz                                                                     |  |
|                           |  |                      |  |              |  | ma                                                                     |  |
|                           |  |                      |  |              |  | mb                                                                     |  |
|                           |  |                      |  |              |  | mc                                                                     |  |
|                           |  |                      |  |              |  | md                                                                     |  |
|                           |  |                      |  |              |  | me                                                                     |  |
|                           |  |                      |  |              |  | mf                                                                     |  |
|                           |  |                      |  |              |  | mg                                                                     |  |
|                           |  |                      |  |              |  | mh                                                                     |  |
|                           |  |                      |  |              |  | mi                                                                     |  |
|                           |  |                      |  |              |  | mj                                                                     |  |
|                           |  |                      |  |              |  | mk                                                                     |  |
|                           |  |                      |  |              |  | ml                                                                     |  |
|                           |  |                      |  |              |  | mm                                                                     |  |
|                           |  |                      |  |              |  | mn                                                                     |  |
|                           |  |                      |  |              |  | mo                                                                     |  |
|                           |  |                      |  |              |  | mp                                                                     |  |
|                           |  |                      |  |              |  | mq                                                                     |  |
|                           |  |                      |  |              |  | mr                                                                     |  |
|                           |  |                      |  |              |  | ms                                                                     |  |
|                           |  |                      |  |              |  | mt                                                                     |  |
|                           |  |                      |  |              |  | mu                                                                     |  |
|                           |  |                      |  |              |  |                                                                        |  |

Hole No. SH-33

| DRILLING LOG                                                                                                                 |       | DIVISION<br>Sout. Atlantic |                                              | INSTALLATION<br>Savannah, GA                                           |                         | SHEET 1<br>OF 2 SHEETS                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------|------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |                            |                                              | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                          |                         |                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>Sta 71+000N, R= "26" (X-837665 Y-758015)                                             |       |                            |                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                      |                         |                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                      |                         |                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-33                                                             |       |                            |                                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                         |                         | DISTURBED<br>6                                                                       |  |
|                                                                                                                              |       |                            |                                              |                                                                        |                         | UNDISTURBED<br>0                                                                     |  |
| 5. NAME OF DRILLER<br>A. L. Padgett                                                                                          |       |                            |                                              | 14. TOTAL NUMBER CORE BOXES                                            |                         |                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                              | 15. ELEVATION GROUND WATER                                             |                         |                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>56.0'                                                                                          |       |                            |                                              | 16. DATE HOLE<br>STARTED 28 Nov 77 COMPLETED 28 Nov 77                 |                         |                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                              | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                   |                         |                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW                                                                                         |       |                            |                                              | 18. TOTAL CORE RECOVERY FOR BORING<br>1                                |                         |                                                                                      |  |
|                                                                                                                              |       |                            |                                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                       |                         |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV-<br>ERY                                                | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| 0.0 MLW                                                                                                                      | 0'    | c                          |                                              |                                                                        |                         |                                                                                      |  |
|                                                                                                                              | 5'    |                            | Water                                        |                                                                        |                         |                                                                                      |  |
|                                                                                                                              | 10'   |                            |                                              |                                                                        |                         |                                                                                      |  |
|                                                                                                                              | 15'   |                            |                                              |                                                                        |                         |                                                                                      |  |
|                                                                                                                              | 20'   |                            |                                              |                                                                        |                         |                                                                                      |  |
|                                                                                                                              | 25'   |                            |                                              |                                                                        |                         |                                                                                      |  |
|                                                                                                                              | 30'   |                            |                                              |                                                                        |                         |                                                                                      |  |
| -30.0                                                                                                                        |       |                            |                                              |                                                                        |                         |                                                                                      |  |
| Continued on sheet 2                                                                                                         |       |                            |                                              |                                                                        |                         |                                                                                      |  |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                                |       |                            |                                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/ |                         |                                                                                      |  |



| DRILLING LOG (Cont Sheet) |            |             | LOCATION TOP OF HOLE                                                  |                              | 0.0 MLW                        |                                                                                                 | Hole No. SH-33 |  |
|---------------------------|------------|-------------|-----------------------------------------------------------------------|------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------|----------------|--|
| PROJECT                   |            |             | INSTALLATION                                                          |                              |                                |                                                                                                 | SHEET 2        |  |
| Savannah Harbor           |            |             | Savannah, GA                                                          |                              |                                |                                                                                                 | OF 2 SHEETS    |  |
| ELEVATION<br>a            | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                     | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f BLOWS |                |  |
| -32.0                     | 30'        |             | Water<br>Bottom of river -32.0'                                       |                              |                                |                                                                                                 |                |  |
|                           | 35'        |             | SM - Gray silty fine and<br>medium sand with thin soft<br>silt layers |                              | 1                              |                                                                                                 | 9              |  |
|                           |            |             |                                                                       |                              |                                |                                                                                                 | 7              |  |
|                           |            |             |                                                                       |                              | 2                              |                                                                                                 | 21             |  |
|                           | 40'        |             |                                                                       |                              |                                |                                                                                                 | 46             |  |
|                           |            |             |                                                                       |                              |                                |                                                                                                 | 28             |  |
|                           |            |             |                                                                       |                              |                                |                                                                                                 | 17             |  |
| -42.5                     |            |             | SM - Dark greenish gray fat<br>clayey silt                            |                              | 3                              |                                                                                                 | 15             |  |
| -44.0                     | 45'        |             |                                                                       |                              | 4                              |                                                                                                 | 11             |  |
|                           |            |             | SM - Green silty fine sand                                            |                              |                                |                                                                                                 | 27             |  |
|                           |            |             |                                                                       |                              |                                |                                                                                                 | 31             |  |
|                           | 50'        |             |                                                                       |                              | 5                              |                                                                                                 | 32             |  |
|                           |            |             | Fine cemented sand, very hard                                         |                              |                                |                                                                                                 | 100/0.9        |  |
|                           |            |             |                                                                       |                              |                                |                                                                                                 | 98             |  |
|                           |            |             |                                                                       |                              |                                |                                                                                                 | 100            |  |
|                           | 55'        |             |                                                                       |                              | 6                              |                                                                                                 | 90             |  |
| -56.0                     |            |             | Bottom of hole -56.0' MLW                                             |                              |                                |                                                                                                 | 89             |  |

Hole No. SH-34

| DRILLING LOG                                                                                                                 |       | DIVISION       |                                                                                        | INSTALLATION                                                             |                   | SHEET 1 OF 2 SHEETS                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       | South Atlantic |                                                                                        | Savannah, GA                                                             |                   |                                                                                |  |
| 2. LOCATION (Coordinates or Station)<br>Sta 70+000N, R=126" (X-838665 Y-758100)                                              |       |                |                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon                         |                   |                                                                                |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                |                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                        |                   |                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-34                                                             |       |                |                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Henwood           |                   |                                                                                |  |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |       |                |                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 11 UNDISTURBED 0 |                   |                                                                                |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                        | 14. TOTAL NUMBER CORE BOXES                                              |                   |                                                                                |  |
| 7. THICKNESS OF OVERBURDEN<br>55.0                                                                                           |       |                |                                                                                        | 15. ELEVATION GROUND WATER                                               |                   |                                                                                |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                |                                                                                        | 16. DATE HOLE STARTED 31 Oct 77 COMPLETED 2 Nov 77                       |                   |                                                                                |  |
| 9. TOTAL DEPTH OF HOLE<br>-55.0' MLW                                                                                         |       |                |                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                     |                   |                                                                                |  |
|                                                                                                                              |       |                |                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                  |                   |                                                                                |  |
|                                                                                                                              |       |                |                                                                                        | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                         |                   |                                                                                |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                              | % CORE RECOVERY                                                          | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 0.0 MLW                                                                                                                      | 0'    | c              | d                                                                                      | e                                                                        | f                 | g                                                                              |  |
|                                                                                                                              |       |                | Water                                                                                  |                                                                          |                   |                                                                                |  |
| -4.0                                                                                                                         | 5'    |                | Bottom of river -4.0'                                                                  |                                                                          | JAR               | BLOWS                                                                          |  |
|                                                                                                                              |       |                | SM - Gray silty fine sand                                                              |                                                                          | 1                 | 7                                                                              |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 5                                                                              |  |
| -8.5                                                                                                                         | 10'   |                | MH - Gray soft clayey silt                                                             |                                                                          | 2                 | 7                                                                              |  |
| -10.5                                                                                                                        |       |                | SM - Gray silty fine and medium sand                                                   |                                                                          | 3                 | 1                                                                              |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 4                                                                              |  |
|                                                                                                                              | 15'   |                | With some soft silt pockets                                                            |                                                                          | 4                 | 8                                                                              |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 15                                                                             |  |
|                                                                                                                              | 20'   |                | Gray and brown                                                                         |                                                                          |                   | 35                                                                             |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 30                                                                             |  |
|                                                                                                                              | 25'   |                | Gray fine silty sand                                                                   |                                                                          | 5                 | 33                                                                             |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 31                                                                             |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 31                                                                             |  |
|                                                                                                                              | 30'   |                | Gray fine sand with soft silt pockets                                                  |                                                                          | 6                 | 25                                                                             |  |
| -30.0                                                                                                                        |       |                | Continued on sheet 2                                                                   |                                                                          |                   | 20                                                                             |  |
|                                                                                                                              |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System |                                                                          |                   | 24                                                                             |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | 25                                                                             |  |
|                                                                                                                              |       |                |                                                                                        |                                                                          |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/            |  |

| DRILLING LOG (Cont Sheet) |       | LOCATION TOP OF HOLE |                                                                           | 0.0 MLW            |                         | Hole No. SH-36                                                                       |       |
|---------------------------|-------|----------------------|---------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                   |       | INSTALLATION         |                                                                           | Savannah, GA       |                         | SHEET 2 OF 2 SHEETS                                                                  |       |
| ELEVATION                 | DEPTH | LEGEND               | CLASSIFICATION OF MATERIALS<br>(Description)                              | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS |
| a                         | 38'   | c                    | d                                                                         | e                  | JAR                     | f                                                                                    |       |
|                           |       |                      | SM - Gray fine silty sand with<br>soft silt pockets                       |                    |                         |                                                                                      | 19    |
|                           |       |                      |                                                                           |                    |                         |                                                                                      | 18    |
|                           |       |                      |                                                                           |                    |                         |                                                                                      | 12    |
|                           | 35'   |                      |                                                                           |                    |                         |                                                                                      | 20    |
|                           |       |                      |                                                                           |                    |                         |                                                                                      | 28    |
| -38.5                     |       |                      |                                                                           |                    |                         |                                                                                      | 34    |
|                           | 40'   |                      | SP - Light tan poorly<br>graded sand                                      |                    | 7                       |                                                                                      | 30    |
| -41.5                     |       |                      |                                                                           |                    |                         |                                                                                      | 18    |
|                           |       |                      | MH - Dark gray soft clayey<br>silt                                        |                    | 8                       |                                                                                      | 3     |
| -45.0                     | 45'   |                      |                                                                           |                    |                         |                                                                                      | 5     |
|                           |       |                      | SP - Tan poorly graded sand                                               |                    | 9                       |                                                                                      | 19    |
| -48.0                     |       |                      |                                                                           |                    |                         |                                                                                      | 20    |
|                           |       |                      |                                                                           |                    |                         |                                                                                      | 68    |
|                           | 50'   |                      | SM - Dark green very fine<br>cemented silty sand, hard<br>slightly clayey |                    | 10                      |                                                                                      | 87    |
|                           |       |                      |                                                                           |                    |                         |                                                                                      | 79    |
|                           |       |                      |                                                                           |                    | 11                      |                                                                                      | 93    |
| -55.0                     | 55'   |                      |                                                                           |                    |                         |                                                                                      | 90    |
|                           |       |                      | Bottom of hole -55.0' MLW                                                 |                    |                         |                                                                                      |       |

Hole No. SH-74

| DRILLING LOG                                                                                                                 |  | DIVISION                                                     | INSTALLATION | SHEET         |
|------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------|--------------|---------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |  | South-Atlantic                                               | Savannah, GA | 1 OF 1 SHEETS |
| 2. LOCATION (Coordinates or Station)<br>See Plans X-831538, Y-760600                                                         |  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon, 4"            |              |               |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  | 11. DATUM FOR ELEVATION SHOWN (TBM or ASL)<br>MLW Fishtail   |              |               |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-74                                                             |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |              |               |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN               |              |               |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 14. TOTAL NUMBER CORE BOXES                                  |              |               |
| 7. THICKNESS OF OVERBURDEN<br>48.7'                                                                                          |  | 15. ELEVATION GROUND WATER                                   |              |               |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |  | 16. DATE HOLE STARTED<br>17 Sep 82 COMPLETED<br>27 Sep 82    |              |               |
| 9. TOTAL DEPTH OF HOLE<br>48.7'                                                                                              |  | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                        |              |               |
|                                                                                                                              |  | 18. TOTAL CORE RECOVERY FOR BORING<br>%                      |              |               |
|                                                                                                                              |  | 19. SIGNATURE OF INSPECTOR<br>G. Arthur, Geologist           |              |               |

| ELEVATION<br>MLW | DEPTH<br>0 | LEGEND<br>b | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                         | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                |
|------------------|------------|-------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -23.3'           | 25         |             | Water<br>Bottom of Harbor 23.3'                                                                                           |                              | JAR                          | Note: Scale change<br>at 25.0' Blows                                                                                                                                                                     |
| -27.0'           |            |             | SP-Grayish green medium to<br>coarse poorly graded sand.                                                                  |                              | 1                            | Note: Weight of tool<br>string drove split-<br>spoon from 23.3' to<br>25.5'. 17 Sep 82 Hole<br>not completed. Barge<br>moved to yard for<br>repairs. 27 Sep 82                                           |
| -30.7'           | 30         |             | (See Remarks)                                                                                                             |                              |                              | Returned to site, set<br>casing to 25.7; washed<br>hole to 30.7' and                                                                                                                                     |
| -33.7'           |            |             | No Recovery                                                                                                               |                              |                              | resumed boring.                                                                                                                                                                                          |
| -36.7'           | 35         |             | SP-Light gray fine to<br>medium poorly graded sand<br>with some mica                                                      |                              | 2                            | 33.7' to 36.7' Took<br>a double drive to<br>retain sample.                                                                                                                                               |
| -42.7'           | 40         |             | No Recovery                                                                                                               |                              |                              | Note: All no recovery<br>drives had fine sand<br>in wash water.                                                                                                                                          |
| -48.7'           | 45         |             | SP-Light gray coarse poorly<br>graded sand with trace of<br>fine gravel                                                   |                              | 3                            | 39.7' to 42.7' Took<br>a double drive but<br>sample fell back in<br>hole.                                                                                                                                |
|                  | 50         |             | Bottom of Hole: 48.7'<br>Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                              |                              | 42.7' to 48.7' Drove<br>splitspoon contin-<br>uously for four drives<br>to retain sample.<br>Note: Terminated hole<br>at 48.7' due to excess<br>time required to<br>clean hole and to<br>obtain samples. |

| Blows Per Foot:<br>Number required to drive<br>1 3/8" ID splitspoon<br>w/140 lb. hammer falling<br>0". |    |    |    |
|--------------------------------------------------------------------------------------------------------|----|----|----|
| Sample Lab                                                                                             |    |    |    |
| No. Class                                                                                              | LL | PL | PI |
| 2                                                                                                      | SP | NP | NP |

Hole No. SH-75

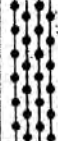
|                                                                                                                                     |  |                                                                                      |                                     |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|-------------------------------------|----------------------------------|
| <b>DRILLING LOG</b>                                                                                                                 |  | <b>DIVISION</b><br>South Atlantic                                                    | <b>INSTALLATION</b><br>Savannah, GA | <b>SHEET</b><br>1<br>OF 2 SHEETS |
| <b>PROJECT</b><br>Savannah Harbor Widening                                                                                          |  | <b>10. SIZE AND TYPE OF BIT</b> 1 3/8" ID splitspoon, 4"                             |                                     |                                  |
| <b>LOCATION (Coordinates or Station)</b><br>See Plan X-832161, Y-759975                                                             |  | <b>11. DATUM FOR ELEVATION SHOWN (FNM or MSL)</b> Fish tail<br>MLW 4X5 1/2" core bbl |                                     |                                  |
| <b>DRILLING AGENCY</b><br>Savannah District                                                                                         |  | <b>12. MANUFACTURER'S DESIGNATION OF DRILL</b><br>Sprague & Henwood                  |                                     |                                  |
| <b>1. HOLE NO. (As shown on drawing title and file number)</b><br>SH-75                                                             |  | <b>13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN</b><br>DISTURBED 9 UNDISTURBED 0        |                                     |                                  |
| <b>2. NAME OF DRILLER</b><br>D. Laroche                                                                                             |  | <b>14. TOTAL NUMBER CORE BOXES</b> 0                                                 |                                     |                                  |
| <b>3. DIRECTION OF HOLE</b><br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | <b>15. ELEVATION GROUND WATER</b>                                                    |                                     |                                  |
| <b>7. THICKNESS OF OVERBURDEN</b> 61.4'                                                                                             |  | <b>16. DATE HOLE</b> STARTED 20 Sep 82 COMPLETED 21 Sep 82                           |                                     |                                  |
| <b>8. DEPTH DRILLED INTO ROCK</b> 0.0'                                                                                              |  | <b>17. ELEVATION TOP OF HOLE</b> 0.0' MLW                                            |                                     |                                  |
| <b>9. TOTAL DEPTH OF HOLE</b> 61.4'                                                                                                 |  | <b>18. TOTAL CORE RECOVERY FOR BORING</b> 92 %                                       |                                     |                                  |
|                                                                                                                                     |  | <b>19. SIGNATURE OF INSPECTOR</b><br>J. Arthur, Geologist                            |                                     |                                  |

| ELEVATION<br>MLW = | DEPTH<br>0b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                            | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                   |
|--------------------|-------------|-------------|----------------------------------------------------------------------------------------------|-------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | 20          |             | Water                                                                                        |                         |                              | Note: Change of scale<br>at 20.0'.                                                                                                                          |
| -21.4'             |             |             | Bottom of Harbor 21.4'                                                                       |                         | JAR                          | Blows                                                                                                                                                       |
|                    | 25          |             | MH-Gray, fat silt, with<br>some fine sand and pieces<br>of wood.                             |                         | 1                            | Note: 21.4' to 28.1'<br>Weight of tool string<br>drove splitspoon.<br>Continued drive with<br>6 blows to 28.7' then<br>tool dropped from<br>28.7' to 36.4'. |
|                    | 30          |             |                                                                                              |                         |                              | Sample Lab                                                                                                                                                  |
|                    | 35          |             |                                                                                              |                         |                              | No. Class -LL PL PI                                                                                                                                         |
|                    |             |             |                                                                                              |                         |                              | 7 CL 38 24 14                                                                                                                                               |
|                    |             |             |                                                                                              |                         |                              | 8 SM-H 104 45 59                                                                                                                                            |
| -36.4'             |             |             | SM-Gray fine silty sand with<br>some mica and fat silt<br>layers.                            |                         | 2                            |                                                                                                                                                             |
| -37.9'             |             |             | (See Remarks)                                                                                |                         |                              |                                                                                                                                                             |
| -40.7'             |             |             | SM-Gray fine silty sand<br>with some mica.                                                   |                         | 3                            | Note: 37.9' to 40.7'<br>Inadvertantly cleaned<br>out hole.                                                                                                  |
| -43.7'             |             |             | Grayish green fine silty<br>sand with some mica and fine                                     |                         | 4                            |                                                                                                                                                             |
| -45.2'             |             |             | to coarse gravel 44.4'-44.2'                                                                 |                         | 5                            |                                                                                                                                                             |
| -46.7'             |             |             | With some shell fragments                                                                    |                         |                              |                                                                                                                                                             |
| -47.5'             |             |             | With some fine to coarse<br>gravel                                                           |                         |                              |                                                                                                                                                             |
|                    |             |             | Continued on Sheet #2                                                                        |                         |                              | Blows Per Foot:<br>Number required to drive<br>1 3/8" ID splitspoon<br>w/140 lb. hammer falling<br>30".                                                     |
|                    |             |             | Note: Soils filed classified<br>in accordance with the Unified<br>Soil Classification System |                         |                              |                                                                                                                                                             |

| DRILLING LOG (Cont Sheet)        |            |             | ACTION TOP OF HOLE 0.0' MLW                                                            |                         | Hole No. SH-75                 |                                                                                           |
|----------------------------------|------------|-------------|----------------------------------------------------------------------------------------|-------------------------|--------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |            |             | INSTALLATION Savannah, GA                                                              |                         | SHEET 2 OF 2 SHEETS            |                                                                                           |
| ELEVATION<br>a                   | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                      | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f |
| -48.2                            | 47.5       |             | SM-Continued                                                                           |                         |                                | Blows                                                                                     |
| -48.7                            |            |             | (See Remarks)                                                                          |                         | 6                              | Note: 48.2'-48.7'                                                                         |
| -50.2'                           | 50         |             | MH-Gray fat silt with some fine sand.                                                  |                         |                                | washed 46                                                                                 |
|                                  |            |             | Green with trace of fine sand, layer of fine sand 52.1' to 52.7'                       |                         |                                | 46                                                                                        |
| -53.2'                           |            |             | SM-Green fine silty sand with trace of fine gravel                                     |                         | 7                              | Note: Scale change at 55.0' 100/0.7                                                       |
| -54.4'                           | 55         |             | CH-Green fat clay with some shell fragments, mica, and fine sand, partially indurated. | 83%                     | 8                              | Pull 1 54.4' to 56.6'                                                                     |
|                                  |            |             | 54.9'-61.4' with less shell fragments                                                  | 100%                    | Box 1                          | Run 2.2' Rec 0.0'                                                                         |
|                                  |            |             |                                                                                        |                         |                                | CL 2.2' (fell in hole)                                                                    |
|                                  |            |             |                                                                                        |                         |                                | JAR #8 54.4' to 54.6'                                                                     |
|                                  |            |             |                                                                                        |                         |                                | Pull 2 56.6' to 61.4'                                                                     |
|                                  | 57         |             |                                                                                        |                         |                                | Run 4.8'                                                                                  |
|                                  |            |             |                                                                                        |                         |                                | Rec 6.6'                                                                                  |
|                                  |            |             |                                                                                        |                         |                                | C.G. 1.8'                                                                                 |
|                                  | 59         |             |                                                                                        |                         |                                | JAR #9 60.8' to 61.0'                                                                     |
|                                  | 61         |             |                                                                                        |                         | 9                              |                                                                                           |
| -61.4                            |            |             | Bottom of Hole: 61.4'                                                                  |                         |                                |                                                                                           |

Hole No. SH-91

| DRILLING LOG                                                                                                              |       | DIVISION<br>South lantic | INSTALLATION<br>Savannah, GA                                                    | SHEET 1<br>of 2 SHEETS |                          |                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|---------------------------------------------------------------------------------|------------------------|--------------------------|---------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening                                                                                       |       |                          | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                   |                        |                          |                                                                                             |
| LOCATION (Coordinates or Station)<br>X-831246, Y760972                                                                    |       |                          | 11. DATUM FOR ELEVATION SHOWN (BSM or MLL)<br>MLW                               |                        |                          |                                                                                             |
| DRILLING AGENCY<br>Savannah District                                                                                      |       |                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                          |                        |                          |                                                                                             |
| HOLE NO. (As shown on drawing title and file number)<br>SH-91                                                             |       |                          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 9 UNDISTURBED 0         |                        |                          |                                                                                             |
| NAME OF DRILLER<br>Earl Maulden and T.W. Scott                                                                            |       |                          | 14. TOTAL NUMBER CORE BOXES 0                                                   |                        |                          |                                                                                             |
| DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                          | 15. ELEVATION GROUND WATER 0.0 MLW                                              |                        |                          |                                                                                             |
| THICKNESS OF OVERBURDEN 50.5' (water & soil)                                                                              |       |                          | 16. DATE HOLE STARTED 18 Sep 83 COMPLETED 18 Sep 83                             |                        |                          |                                                                                             |
| DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                          | 17. ELEVATION TOP OF HOLE 0.0 MLW                                               |                        |                          |                                                                                             |
| TOTAL DEPTH OF HOLE 50.5'                                                                                                 |       |                          | 18. TOTAL CORE RECOVERY FOR BORING 5                                            |                        |                          |                                                                                             |
|                                                                                                                           |       |                          | 19. SIGNATURE OF INSPECTOR<br>James E. Rolan Geologist <i>James E. Rolan</i>    |                        |                          |                                                                                             |
| LEVATION                                                                                                                  | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                                    | % CORE RECOVERY        | BOX OR SAMPLE NO.<br>JMR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)           |
| 0.0                                                                                                                       | 0     |                          | Sea Water 0.0'-9.2'                                                             |                        |                          | Note: Change of scale at 10.0'                                                              |
| -9.2                                                                                                                      | 10    |                          | Bottom of Harbor: 9.2'                                                          |                        | 1                        | Note: Weight of tools 9.2'-14.4'                                                            |
| -14.4                                                                                                                     | 15    |                          | MH-Dark green fat clayey silt with a little medium sand                         |                        | 2                        | Note: After driving to 15.9' cleaned out boring 16.0' following drive 16.0'-17.5'           |
|                                                                                                                           | 20    |                          | SM-Gray silty medium fine sand with laminations of dark green fat clay 10%      |                        | 3                        | Note: At 17.5' set 6" diameter steel casing to 17.5'.                                       |
|                                                                                                                           | 25    |                          | High silt content                                                               |                        | 4                        |                                                                                             |
|                                                                                                                           | 30    |                          | With wood chips                                                                 |                        | 5                        | Advanced casing to 29.7'                                                                    |
| -29.5                                                                                                                     | 35    |                          | MH-Dark gray fat clayey silt with some wood chips                               |                        | 6                        | Sample Lab                                                                                  |
| -32.5                                                                                                                     | 40    |                          | CH-Dark gray-green silty fat clay                                               |                        | 7                        | No. Class LL PL PI                                                                          |
|                                                                                                                           |       |                          |                                                                                 |                        | 8                        | 3 SP-SH NP NP NP                                                                            |
|                                                                                                                           |       |                          |                                                                                 |                        |                          | 5 CH 59 25 34                                                                               |
|                                                                                                                           |       |                          |                                                                                 |                        |                          | 7 CL 39 18 21                                                                               |
|                                                                                                                           |       |                          |                                                                                 |                        |                          | 9 SW NP NP NP                                                                               |
| -40.0                                                                                                                     |       |                          | Continued on Sheet 2                                                            |                        |                          | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |
|                                                                                                                           |       |                          | Note: Soils field classified in accordance with the Unified Soil Classification |                        |                          |                                                                                             |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE                                                             |                                                                                       | 0.0' MLW                 |                         | Hole No. SH-91                                                                       |       |
|---------------------------|-------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------------------------|-------|
| PROJECT                   |       |                                                                                   | INSTALLATION                                                                          |                          |                         | SHEET 2                                                                              |       |
| Savannah Harbor Widening  |       |                                                                                   | Savannah, GA                                                                          |                          |                         | OF 2 SHEETS                                                                          |       |
| ELEVATION                 | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS<br>(Description)                                          | % CORE<br>RECOVER<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |       |
| -40.0                     | 40 b  | c                                                                                 | d                                                                                     | e                        | JAR                     | R                                                                                    | Blows |
|                           |       |  | CH-Dark gray green silty fat<br>clay<br>With 30% medium fine sand                     |                          |                         | Note: Advanced casing 7<br>to 45.0'.                                                 |       |
| -44.5                     | 45    |  | SM-Gray, brown silty coarse<br>medium sand, with 10% fine<br>gravel, low silt content |                          | 9                       |                                                                                      | 12    |
|                           |       |                                                                                   |                                                                                       |                          |                         |                                                                                      | 21    |
|                           |       |                                                                                   |                                                                                       |                          |                         |                                                                                      | 17    |
|                           |       |                                                                                   |                                                                                       |                          |                         |                                                                                      | 16    |
| -50.5                     | 50    |  |                                                                                       |                          |                         |                                                                                      | 50    |
|                           |       |                                                                                   | Bottom of Hole: 50.5'                                                                 |                          |                         |                                                                                      | 38    |

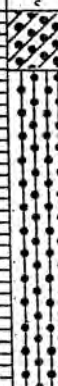


Hole No. SH-92

| DRILLING LOG                                                                                                                 |                 | DIVISION<br>South Atlantic |                                                                                                  | INSTALLATION<br>Savannah, GA                                                  |                                     | SHEET 1<br>of 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |                 |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 3/8" ID splitspoon                                   |                                     |                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X-833760, Y-759260                                                                   |                 |                            |                                                                                                  | 11. DAYUM FOR ELEVATION SHOWN (TBM or BGL)<br>MLW                             |                                     |                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |                 |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Pailing 314                        |                                     |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-92                                                             |                 |                            |                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                |                                     | DISTURBED<br>6                                                                                       |  |
|                                                                                                                              |                 |                            |                                                                                                  |                                                                               |                                     | UNDISTURBED<br>(0)                                                                                   |  |
| 5. NAME OF DRILLER<br>Earl Maulden                                                                                           |                 |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES (0)                                               |                                     |                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                 |                            |                                                                                                  | 15. ELEVATION GROUND WATER 0.0 MLW                                            |                                     |                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 50.5'                                                                                             |                 |                            |                                                                                                  | 16. DATE HOLE                                                                 |                                     | STARTED<br>19 Sep 83                                                                                 |  |
|                                                                                                                              |                 |                            |                                                                                                  |                                                                               |                                     | COMPLETED<br>19 Sep 83                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |                 |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0 MLW                                             |                                     |                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 50.5'                                                                                                 |                 |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING                                            |                                     |                                                                                                      |  |
|                                                                                                                              |                 |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist <i>James E. Bolen</i> |                                     |                                                                                                      |  |
| ELEVATION<br>0.0<br>a                                                                                                        | DEPTH<br>0<br>b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                                       | BOX OR<br>SAMPLE<br>NO.<br>f<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g<br>Blows   |  |
|                                                                                                                              | 10              |                            | Sea Water 0.0'-35.2'                                                                             |                                                                               |                                     | Note: Change of scale<br>at 30.0'                                                                    |  |
|                                                                                                                              | 20              |                            |                                                                                                  |                                                                               |                                     | Sample Lab                                                                                           |  |
|                                                                                                                              | 30              |                            |                                                                                                  |                                                                               |                                     | No. Class LL PL PI                                                                                   |  |
|                                                                                                                              |                 |                            |                                                                                                  |                                                                               |                                     | 1 CH 125 38 87                                                                                       |  |
|                                                                                                                              |                 |                            |                                                                                                  |                                                                               |                                     | 3 SP NP NP NP                                                                                        |  |
|                                                                                                                              |                 |                            |                                                                                                  |                                                                               |                                     | 5 CH 103 29 74                                                                                       |  |
| -35.2                                                                                                                        | 35              |                            | Bottom of Harbor: 35.2'                                                                          |                                                                               | 1                                   | Note: At 38.3' set 6"                                                                                |  |
| -36.8                                                                                                                        |                 |                            | MH-Dark green fat clayey<br>silt with a trace of<br>sand                                         |                                                                               | 2                                   | diameter casing steel<br>to 38.5'.                                                                   |  |
|                                                                                                                              | 40              |                            | SM-Gray silty coarse medium<br>sand, moderate silt content                                       |                                                                               | 3                                   | Following drive was<br>38.5'-40.0'                                                                   |  |
|                                                                                                                              | 45              |                            |                                                                                                  |                                                                               |                                     | Note: Casing is<br>advanced 1.5' after<br>each drive while<br>sampling in SM<br>material.            |  |
|                                                                                                                              |                 |                            |                                                                                                  |                                                                               | 4                                   |                                                                                                      |  |
|                                                                                                                              | 50              |                            | ML-Dark green clayey silt<br>with 15% fine sand                                                  |                                                                               | 5                                   |                                                                                                      |  |
| -48.5                                                                                                                        |                 |                            |                                                                                                  |                                                                               | 6                                   |                                                                                                      |  |
| -50.5                                                                                                                        |                 |                            | Bottom of Hole: 50.5'                                                                            |                                                                               |                                     | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30". |  |
|                                                                                                                              |                 |                            | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                                                               |                                     |                                                                                                      |  |

Hole No. SH-93

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                                                  | INSTALLATION<br>Savannah GA                            |                                | SHEET 1<br>OF 2 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon          |                                |                                                                                           |  |
| 2. LOCATION (City, latitude or Station)<br>Y-814780 Y-759030                                                                 |            |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (THM or MSL)<br>MLW      |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 114 |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-93                                                             |            |                            |                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN         |                                | DISTURBED<br>12                                                                           |  |
| 5. NAME OF DRILLER<br>C. Maulden                                                                                             |            |                            |                                                                                                  | 14. TO NUMBER CORE BOXES                               |                                | 0.0                                                                                       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                  | 15. ELEVATION GROUND WATER                             |                                | 0.0 MLW                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN<br>51.0' including water                                                                          |            |                            |                                                                                                  | 16. DATE HOLE                                          |                                | STARTED<br>12 Sep 83                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE                              |                                | 0.0 MLW                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>51.0'                                                                                              |            |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING                     |                                | N/A                                                                                       |  |
|                                                                                                                              |            |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR                             |                                | James E. Bolon, Geologist                                                                 |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                           | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              |            |                            | Sea Water 0.0'-11.1'                                                                             |                                                        |                                | Note: Change of scale<br>10.0'.                                                           |  |
| -11.1                                                                                                                        | 10         |                            | Bottom of Harbor 11.1'                                                                           |                                                        |                                | Blows                                                                                     |  |
|                                                                                                                              |            |                            | MH-Black green fat clayey<br>silt with 15% medium fine<br>sand                                   |                                                        | 1                              | Note: Weight of tools<br>11.1'-16.6'                                                      |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        | 2                              | Sample Lab                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | No. Class LL PL PI                                                                        |  |
| -16.6                                                                                                                        | 15         |                            | SM-Dark green silt medium<br>fine sand with lenses of<br>clay 25%.                               |                                                        | 3                              | 2 CH 138 41 97                                                                            |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 4 SP-SM NP NP NP                                                                          |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 6 CH 81 30 5111                                                                           |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 8 SM 37 30 7                                                                              |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 10 SP NP NP NP10                                                                          |  |
| -21.0                                                                                                                        | 20         |                            | CH-Dark gray silty fat clay<br>with wood chips 10%<br>(possibly an old piling)                   |                                                        | 4                              | Note: After driving to<br>21.1'. Cleaned out                                              |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        | 5                              | boring to 21.0'. 5                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | Following drive was                                                                       |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 21.0'-22.5' set 6" 14                                                                     |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        | 6                              | diameter steel casing, 10                                                                 |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | to 22.5'                                                                                  |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | Weight of tools                                                                           |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 25.5'-28.4'. Cleaned                                                                      |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | out to 30.0'                                                                              |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        | 7                              |                                                                                           |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | Weight of hammer                                                                          |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | 31.5'-32.9'. After 4                                                                      |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | driving to 34.4' 5                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | cleaned out to 34.5'.                                                                     |  |
|                                                                                                                              |            |                            |                                                                                                  |                                                        |                                | Next drive was 34.5'- 6                                                                   |  |
| -34.5                                                                                                                        | 35         |                            | SC-Alternating lenses of<br>gray silty medium fine<br>sand and lean clay                         |                                                        | 8                              | 36.0'                                                                                     |  |
| -35.0                                                                                                                        |            |                            | Continued on Sheet 2                                                                             |                                                        |                                | Blows Per Foot: Number                                                                    |  |
|                                                                                                                              |            |                            | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                                        |                                | required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30".                |  |

| DRILLING LOG (Cont Sheet)        |       |                                                                                   | REV. 14 TOP OF HOLE                                                |                 | 0.0 MLW           |                                                                                                              | Hole No. SH-93 |  |
|----------------------------------|-------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------------------------------------|----------------|--|
| PROJECT Savannah Harbor Widening |       |                                                                                   | INSTALLATION Savannah, GA                                          |                 |                   | SHEET 2 OF 2 SHEETS                                                                                          |                |  |
| ELEVATION                        | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS (Description)                          | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                               |                |  |
| -35.0                            | 35    |                                                                                   | d                                                                  | e               | TAR               | K                                                                                                            | Blows          |  |
| -37.5                            | 40    |  | SC-Alternating lenses of gray silty medium fine sand and lean clay |                 | 8                 | Note: 36.0' advanced casing to 36.0'                                                                         | 29             |  |
|                                  |       |                                                                                   | SM-Gray silty coarse medium sand (low silt content)                |                 | 9                 |                                                                                                              | 30             |  |
|                                  |       |                                                                                   |                                                                    |                 | 10                | 100/0.8                                                                                                      |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 42                                                                                                           |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 37                                                                                                           |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 100/0.9                                                                                                      |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 34                                                                                                           |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 48                                                                                                           |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 56                                                                                                           |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | 34                                                                                                           |                |  |
| -51.0                            | 50    |                                                                                   | Silty coarse, fine sand (moderate silt content)                    |                 | 11                |                                                                                                              | 68             |  |
|                                  |       |                                                                                   | Bottom of Hole: 51.0'                                              |                 | 12                |                                                                                                              |                |  |
|                                  |       |                                                                                   |                                                                    |                 |                   | Note: Casing must be advanced approximately once for every 3" feet of sampling in order to keep boring open. |                |  |

| DRILLING LOG                                                                                                                 |       |        | DIVISION                                                                                 |                 | INSTALLATION                                                              |                                                                                                                                           | Hole No. SH-96                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------|------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--|
|                                                                                                                              |       |        | Sou... Atlantic                                                                          |                 | Savannah, GA                                                              |                                                                                                                                           | SHEET 1 OF 1 SHEETS                            |  |
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |        |                                                                                          |                 | 10. SIZE AND TYPE OF BIT 3/8" ID splitspoon                               |                                                                                                                                           |                                                |  |
| 2. LOCATION (Coordinates or Station)<br>X 835825, Y 758595                                                                   |       |        |                                                                                          |                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                         |                                                                                                                                           |                                                |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |        |                                                                                          |                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                    |                                                                                                                                           |                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SR-96                                                             |       |        |                                                                                          |                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                |                                                                                                                                           | DISTURBED<br>4<br>UNDISTURBED<br>0             |  |
| 5. NAME OF DRILLER<br>E. Maulden and T.W. Scott                                                                              |       |        |                                                                                          |                 | 14. TOTAL NUMBER CORE BOXES                                               |                                                                                                                                           | 0                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |        |                                                                                          |                 | 15. ELEVATION GROUND WATER                                                |                                                                                                                                           | 0.0 MLW                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>50.4 includes water                                                                            |       |        |                                                                                          |                 | 16. DATE HOLE                                                             |                                                                                                                                           | STARTED<br>22 Sep 83<br>COMPLETED<br>22 Sep 83 |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                            |       |        |                                                                                          |                 | 17. ELEVATION TOP OF HOLE                                                 |                                                                                                                                           | 0.0 MLW                                        |  |
| 9. TOTAL DEPTH OF HOLE<br>50.4                                                                                               |       |        |                                                                                          |                 | 18. TOTAL CORE RECOVERY FOR BORING                                        |                                                                                                                                           | N/A                                            |  |
|                                                                                                                              |       |        |                                                                                          |                 | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist <i>J.E. Bolen</i> |                                                                                                                                           |                                                |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE RECOVERY | BOX OR SAMPLE NO.                                                         | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                         |                                                |  |
| 0.0                                                                                                                          | 0     |        |                                                                                          |                 | 1                                                                         | Blows                                                                                                                                     |                                                |  |
|                                                                                                                              | 10    |        | Sea Water 0.0'-32.9'                                                                     |                 |                                                                           | Sample Lab<br>No. Class LL PL PI<br>1 SP NP NP NP<br>4 SP NP NP NP                                                                        |                                                |  |
|                                                                                                                              | 20    |        |                                                                                          |                 |                                                                           | Note: Change of scale at 30.0'.                                                                                                           |                                                |  |
|                                                                                                                              | 30    |        |                                                                                          |                 |                                                                           |                                                                                                                                           |                                                |  |
| -32.9                                                                                                                        | 32.9  |        | Bottom of Harbor 32.9'                                                                   |                 |                                                                           |                                                                                                                                           |                                                |  |
|                                                                                                                              | 35    |        | SM-Brown silty coarse, fine sand, moderate silt content                                  |                 | 1                                                                         | Note: Weight of tools 32.9'-33.8'.<br>At 36.8' set 6" casing to 37.0'.<br>Following drive is 37.0'-38.5'. Weight of tools 38.5'-40.0'. 20 |                                                |  |
|                                                                                                                              | 40    |        |                                                                                          |                 | 2                                                                         |                                                                                                                                           |                                                |  |
|                                                                                                                              | 45    |        |                                                                                          |                 | 3                                                                         | Note: Casing must be advanced continually after each drive while sampling SM material. 50<br>29<br>66<br>49<br>27<br>33                   |                                                |  |
|                                                                                                                              | 50    |        |                                                                                          |                 | 4                                                                         | 100/0.0                                                                                                                                   |                                                |  |
|                                                                                                                              |       |        | Bottom of Hole: 50.4'                                                                    |                 |                                                                           | Blows Per Foot: Number required to drive 1 3/8" splitspoon w/140 lb. hammer falling 30".                                                  |                                                |  |
|                                                                                                                              |       |        | Note: Soils field classified in accordance with the Unified Soils Classification System. |                 |                                                                           |                                                                                                                                           |                                                |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                          | INSTALLATION<br>Savannah, GA                                        |                   | Hole No. SH-98<br>SHEET 1<br>OF 2 SHEETS                                          |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                          | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon                    |                   |                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-836803 Y-758332                                                                    |       |                            |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                   |                   |                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314              |                   |                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-98                                                             |       |                            |                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKE: DISTURBED 8 UNDISTURBED 0 |                   |                                                                                   |  |
| 5. NAME OF DRILLER<br>E. Maulden-T.W. Scott                                                                                  |       |                            |                                                                                          | 14. TOTAL NUMBER CORE BOXES<br>0                                    |                   |                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                          | 15. ELEVATION GROUND WATER<br>0.0 MLW                               |                   |                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN<br>50.5' incudes water                                                                            |       |                            |                                                                                          | 16. DATE HOLE STARTED 23 Sep 83 COMPLETED 24 Sep 83                 |                   |                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                          | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                |                   |                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>50.5'                                                                                              |       |                            |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                         |                   |                                                                                   |  |
|                                                                                                                              |       |                            |                                                                                          | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist             |                   |                                                                                   |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE RECOVERY                                                     | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 0.0                                                                                                                          | 0     |                            |                                                                                          |                                                                     | JAR               | Blows                                                                             |  |
|                                                                                                                              | 10    |                            | Sea Water 0.0'-15.2'                                                                     |                                                                     |                   | Note: Change of scale at 10.0'                                                    |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | Sample Lab                                                                        |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | No. Class LL PL PI                                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 2 SP NP NP NP                                                                     |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 4 SP NP NP NP                                                                     |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 8 SP NP NP NP                                                                     |  |
| -15.2                                                                                                                        | 15    |                            | Bottom of Harbor 15.2'                                                                   |                                                                     |                   |                                                                                   |  |
|                                                                                                                              |       |                            | SM-Gray, green silty medium fine sand moderate silt content                              |                                                                     | 1                 | Note: Weight of tools 15.2'-15.8'.                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | After driving to 12                                                               |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 71.8'; cleaned out 28                                                             |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | hole to 72.0'.                                                                    |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | Following drive was 12                                                            |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 72.0'-74.5'.                                                                      |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 6" steel casing set 16                                                            |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | to 74.5'. Must be 53                                                              |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     | 3                 | advanced 1.5' after 47                                                            |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | each drive. 100                                                                   |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 24                                                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 33                                                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     | 4                 | 25                                                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 39                                                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 29                                                                                |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     | 5                 |                                                                                   |  |
| -35.0                                                                                                                        |       |                            | Continued on Sheet 2                                                                     |                                                                     |                   | Blows Per Foot: Number                                                            |  |
|                                                                                                                              |       |                            | Note: Soils field classified in accordance with the Unified Soils Classification System. |                                                                     |                   | required to drive a                                                               |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | 1 3/8" ID splitspoon                                                              |  |
|                                                                                                                              |       |                            |                                                                                          |                                                                     |                   | w/100 lb. hammer falling 30".                                                     |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                              | Hole No.                  |                         |                                                                                      |
|---------------------------|-------|-----------------------|----------------------------------------------|---------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION          |                                              | SHEET 2                   |                         |                                                                                      |
| Savannah Harbor Widening  |       | Savannah, GA          |                                              | OF 2 SHEETS               |                         |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -35.0                     | 39    | c                     | d                                            | e                         | 5                       | f Blows                                                                              |
|                           |       |                       | SM-Gray brown silty coarse,<br>fine sand.    |                           |                         | 48                                                                                   |
|                           |       |                       |                                              |                           |                         | 38                                                                                   |
|                           |       |                       |                                              |                           |                         | 37                                                                                   |
|                           | 40    |                       |                                              |                           | 6                       | 29                                                                                   |
|                           |       |                       |                                              |                           |                         | 33                                                                                   |
|                           |       |                       |                                              |                           |                         | 100/0.7                                                                              |
|                           | 45    |                       | Silty medium, fine grained<br>sand           |                           | 7                       | 59                                                                                   |
|                           |       |                       |                                              |                           |                         | 54                                                                                   |
|                           |       |                       |                                              |                           |                         | 72                                                                                   |
|                           | 50    |                       |                                              |                           | 8                       | 78                                                                                   |
| -50.5                     |       |                       | Bottom of Hole: 50.5'                        |                           |                         | 100/0.8                                                                              |

Hole No. SH-100

| DRILLING LOG                                                              |              | DIVISION<br>South Atlantic |                                                                                                                  | INSTALLATION<br>Savannah, GA                           |                              | SHEET 1<br>OF 2 SHEETS                                                                                |  |
|---------------------------------------------------------------------------|--------------|----------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                    |              |                            |                                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon          |                              |                                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>X-837669 Y-758108                 |              |                            |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW      |                              |                                                                                                       |  |
| 3. DRILLING AGENCY<br>Savannah District                                   |              |                            |                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314 |                              |                                                                                                       |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-100         |              |                            |                                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN         |                              | DISTURBED<br>12<br>UNDISTURBED<br>0                                                                   |  |
| 5. NAME OF DRILLER<br>K. Maulien                                          |              |                            |                                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                       |                              |                                                                                                       |  |
| 6. DIRECTION OF HOLE<br>( ) VERTICAL ( ) INCLINED _____ DEG. FROM VERT.   |              |                            |                                                                                                                  | 15. ELEVATION GROUND WATER<br>0.0 MLW                  |                              |                                                                                                       |  |
| 7. THICKNESS OF OVERBURDEN<br>50.0' includes water                        |              |                            |                                                                                                                  | 16. DATE HOLE<br>STARTED 25 Sep 81 COMPLETED 25 Sep 81 |                              |                                                                                                       |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                        |              |                            |                                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                   |                              |                                                                                                       |  |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                           |              |                            |                                                                                                                  | 18. TOTAL CORE RECOVERY PER BORING<br>N/A              |                              |                                                                                                       |  |
| 19. SIGNATURE OF INSPECTOR<br>T.W. Scott and J.E. Boley <i>J.E. Boley</i> |              |                            |                                                                                                                  |                                                        |                              |                                                                                                       |  |
| ELEVATION<br>0.0 a                                                        | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                | % CORE<br>RECOVER-<br>Y<br>e                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g             |  |
|                                                                           |              |                            | Sea Water 0.0'-14.0'                                                                                             |                                                        |                              | Note: Change of scale<br>at 10.0'                                                                     |  |
|                                                                           | 10           |                            |                                                                                                                  |                                                        |                              |                                                                                                       |  |
|                                                                           |              |                            | Bottom of Harbor 14.0'                                                                                           |                                                        |                              |                                                                                                       |  |
| -14.0                                                                     | 15           |                            | MH-Gray fat clayey silt                                                                                          |                                                        | 1                            | Note: Weight of tools 7                                                                               |  |
| -14.4                                                                     |              |                            | SM-Green silty medium, fine sand                                                                                 |                                                        | 2                            | 14.0'-14.4'.<br>After driving to 14                                                                   |  |
|                                                                           |              |                            |                                                                                                                  |                                                        | 3                            | 17.4' cleaned out<br>to 17.5'.<br>6" diameter casing                                                  |  |
| -20.5                                                                     | 20           |                            | SC-Alternating lenses of green silty medium, fine sand and fat clay                                              |                                                        | 4                            | was set to 17.5'<br>and periodically<br>advanced 1.5' after<br>each drive until<br>sampling to 44.0'. |  |
|                                                                           |              |                            |                                                                                                                  |                                                        |                              |                                                                                                       |  |
| -25.0                                                                     | 25           |                            | SM-Green silty coarse, medium sand                                                                               |                                                        | 5                            | Sample Lab                                                                                            |  |
|                                                                           |              |                            |                                                                                                                  |                                                        |                              | No. Class LL PL PI                                                                                    |  |
| -28.0                                                                     |              |                            |                                                                                                                  |                                                        |                              | 2 SP NP NP NP 25                                                                                      |  |
|                                                                           |              |                            | CH-Dark gray silty fat clay                                                                                      |                                                        | 6                            | 4 SC-H 57 22 35                                                                                       |  |
|                                                                           | 30           |                            |                                                                                                                  |                                                        |                              | 7 CH 144 41 103                                                                                       |  |
|                                                                           |              |                            |                                                                                                                  |                                                        |                              | 10 SP-SM NP NP NP                                                                                     |  |
|                                                                           |              |                            |                                                                                                                  |                                                        |                              | weight of tools<br>28.0'-32.5' 5                                                                      |  |
| -35.0                                                                     | 35           |                            | Continued on Sheet 2<br>Note: Soils field classified in accordance with the Unified Soils Classification System. |                                                        | 7                            | Blows Per Foot: Number required to drive a 1 3/8" ID splitspoon w/140 lb. hammer falling 30".         |  |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE |                                                           | Hole No.                 |                         |                                                                                      |
|----------------------------------|-------|-----------------------|-----------------------------------------------------------|--------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       | 0.0 MLW               |                                                           | SH-100                   |                         |                                                                                      |
| INSTALLATION Savannah, GA        |       | SHEET 2               |                                                           | OF 2 SHEETS              |                         |                                                                                      |
| ELEVATION                        | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)              | % CORE<br>RECOVER<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -35.0                            | 35    | c                     | d                                                         | e                        | JAR                     | k Blows                                                                              |
|                                  |       |                       | CH-Dark blue silty fat clay                               |                          | 7                       | Note: 37.0'-39.5'<br>weight of tools                                                 |
|                                  | 40    |                       |                                                           |                          | 8                       |                                                                                      |
|                                  |       |                       |                                                           |                          | 9                       |                                                                                      |
| -44.0                            |       |                       |                                                           |                          | 10                      |                                                                                      |
|                                  | 45    |                       | SM-Gray silty medium fine sand                            |                          | 11                      |                                                                                      |
|                                  |       |                       |                                                           |                          |                         | 21                                                                                   |
|                                  |       |                       |                                                           |                          |                         | 29                                                                                   |
|                                  |       |                       |                                                           |                          |                         | 42                                                                                   |
| -50.0                            | 50    |                       | Gray silty coarse, medium<br>sand with 15% fine<br>gravel |                          | 12                      | 100/0.9                                                                              |
|                                  |       |                       | Bottom of Hole: 50.0'                                     |                          |                         |                                                                                      |



| DRILLING LOG                                                                                                                 |            |             | DIVISION                                                                                                        | INSTALLATION                                                              | Hole No.                     | SH-101                                                                                     | SHEET 1<br>OF 2 SHEETS |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------|------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            |             | South Atlantic                                                                                                  | Savannah, GA                                                              |                              |                                                                                            |                        |
| 2. LOCATION (Coordinates or Station)<br>X-838598 Y-758040                                                                    |            |             |                                                                                                                 | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                             |                              |                                                                                            |                        |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |             |                                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                         |                              |                                                                                            |                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-101                                                            |            |             |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                    |                              |                                                                                            |                        |
| 5. NAME OF DRILLER<br>E. Maulden                                                                                             |            |             |                                                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                | DISTURBED<br>13              | UNDISTURBED<br>0                                                                           |                        |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             |                                                                                                                 | 14. TOTAL NUMBER CORE BOXES<br>0                                          |                              |                                                                                            |                        |
| 7. THICKNESS OF OVERBURDEN<br>50.0' includes water                                                                           |            |             |                                                                                                                 | 15. ELEVATION GROUND WATER<br>0.0' MLW                                    |                              |                                                                                            |                        |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |             |                                                                                                                 | 16. DATE HOLE<br>STARTED 25 Sep 83 COMPLETED 26 Sep 83                    |                              |                                                                                            |                        |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |            |             |                                                                                                                 | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                      |                              |                                                                                            |                        |
|                                                                                                                              |            |             |                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                 | 1                            |                                                                                            |                        |
|                                                                                                                              |            |             |                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>T.W. Scott and J.E. Bolen <i>J.E. Bolen</i> |                              |                                                                                            |                        |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                               | % CORE<br>RECOV-<br>ERY<br>e                                              | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g     |                        |
|                                                                                                                              | 10         |             | Sea Water 0.0'-15.2'                                                                                            |                                                                           |                              | Note: Change of scale at 10.0'                                                             |                        |
| -15.2                                                                                                                        | 15         |             | Bottom of Harbor 15.2'                                                                                          |                                                                           |                              |                                                                                            |                        |
| -16.9                                                                                                                        |            |             | CK-Bluish gray silty fat clay                                                                                   |                                                                           | 1                            | Note: Weight of tools 15.2'-15.4'                                                          |                        |
| -18.5                                                                                                                        |            |             | SM-Gray silty medium, fine sand                                                                                 |                                                                           | 2                            | Cleaned out boring to 18.5'                                                                |                        |
|                                                                                                                              | 20         |             | CH-Gray-blue silty fat clay                                                                                     |                                                                           | 3                            | Set 6" diameter steel casing to 21.5'                                                      |                        |
|                                                                                                                              |            |             |                                                                                                                 |                                                                           |                              | Sample Lab                                                                                 |                        |
| -23.0                                                                                                                        |            |             | SC-Alternating layers of gray silty coarse, medium sand and fat clay                                            |                                                                           | 4                            | No Class LL PL PI                                                                          |                        |
|                                                                                                                              | 25         |             |                                                                                                                 |                                                                           |                              | 3 CH 142 38 104                                                                            |                        |
| -26.0                                                                                                                        |            |             | CH-Dark gray silty fat clay with sand laminations 15% of sample                                                 |                                                                           | 5                            | 5 SC-H 73 23 50                                                                            |                        |
|                                                                                                                              |            |             |                                                                                                                 |                                                                           | 6                            | 7 SP-SM NP NP NP                                                                           |                        |
|                                                                                                                              | 30         |             |                                                                                                                 |                                                                           |                              | 10 SP NP NP NP                                                                             |                        |
|                                                                                                                              |            |             |                                                                                                                 |                                                                           |                              | Weight of tools 26.0'-30.9'                                                                |                        |
|                                                                                                                              |            |             |                                                                                                                 |                                                                           | 7                            | Note: At 32.4' cleaned out hole to 32.5'. Weight of tools 32.5'-34.8'                      |                        |
| -34.8                                                                                                                        | 35         |             | SM-Gray silty medium, fine sand with lenses of fat clay                                                         |                                                                           |                              |                                                                                            |                        |
| -35.0                                                                                                                        |            |             | Continued on Sheet 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                           |                              | Blows Per Foot: Number required to drive 1 3/8 ID splitspoon w/140 lb. hammer falling 30". |                        |



Hole No. SH-102

| DRILLING LOG                                                                                                                 |            | DIVISION       | INSTALLATION                                                                                                             | SHEET 1 OF 2 SHEETS            |                              |                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |            | South Atlantic | Savannah, GA                                                                                                             |                                |                              |                                                                                                                             |
| 2. LOCATION (Coordinates or Station)<br>X-838175 Y-758052                                                                    |            |                | 10. SIZE AND TYPE OF BIT: 1 3/8" ID split spoon                                                                          |                                |                              |                                                                                                                             |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                                        |                                |                              |                                                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-102                                                            |            |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                                                   |                                |                              |                                                                                                                             |
| 5. NAME OF DRILLER<br>F. Maulden                                                                                             |            |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                               | DISTURBED<br>11                | UNDISTURBED<br>0             |                                                                                                                             |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                | 14. TOTAL NUMBER CORE BOXES<br>0                                                                                         |                                |                              |                                                                                                                             |
| 7. THICKNESS OF OVERBURDEN<br>50.0' includes water                                                                           |            |                | 15. ELEVATION GROUND WATER<br>0.0 MLW                                                                                    |                                |                              |                                                                                                                             |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                | 16. DATE HOLE                                                                                                            | STARTED<br>30 Sep 83           | COMPLETED<br>30 Sep 83       |                                                                                                                             |
| 9. TOTAL DEPTH OF HOLE<br>50.0'                                                                                              |            |                | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                                                     |                                |                              |                                                                                                                             |
|                                                                                                                              |            |                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                                                |                                |                              |                                                                                                                             |
|                                                                                                                              |            |                | 19. SIGNATURE OF INSPECTOR<br>James E. Bolen, Geologist                                                                  |                                |                              |                                                                                                                             |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                        | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                   |
|                                                                                                                              |            |                | Sea Water 0.0'-2.0'                                                                                                      |                                | JAR                          | Blows                                                                                                                       |
|                                                                                                                              |            |                | Bottom of Harbor 2.0'                                                                                                    |                                |                              |                                                                                                                             |
| -2.0                                                                                                                         | 5          |                | MH-Dark gray fat clayey<br>silt with 15% medium grain-<br>ed sand                                                        |                                | 1                            | Note: Weight of tools<br>2.0'-7.4'                                                                                          |
| -7.4                                                                                                                         | 10         |                | SM-Gray silty coarse medium<br>sand, moderate silt content                                                               |                                | 2                            | Note: At 10.4'<br>cleaned out to 10.5'<br>Next drive was<br>10.5'-12.0.                                                     |
|                                                                                                                              | 15         |                |                                                                                                                          |                                | 3                            | At 13.5' set 6"<br>diameter steel<br>casing to 13.5'                                                                        |
|                                                                                                                              | 20         |                |                                                                                                                          |                                | 4                            | Weight of tools<br>16.5'-17.2'<br>Next drive 17.2'-<br>18.7'                                                                |
|                                                                                                                              | 25         |                |                                                                                                                          |                                |                              | Weight of tools<br>19.0-20.0'                                                                                               |
|                                                                                                                              | 30         |                |                                                                                                                          |                                |                              | Weight of tools<br>24.5'-26.5'                                                                                              |
|                                                                                                                              |            |                | With lenses of clay 10%                                                                                                  |                                | 5                            | Sample Lab W/T<br>No. Class LL PL PI                                                                                        |
| -24.5                                                                                                                        | 25         |                | SC-Alternating layers of<br>fat clay and gray silty<br>medium fine sand                                                  |                                | 6                            | 1 CH 86 34 52<br>4 SP-SM NP NP NP 17<br>6 SM NP NP NP<br>7 MH 80 40 40 11<br>9 MH 70 35 35<br>10 SP-SM NP NP NP W/T         |
| -26.5                                                                                                                        |            |                | CH-Dark gray silty fat clay<br>with some black wood chips                                                                |                                | 7                            | Weight of tools<br>28.0'-29.1'                                                                                              |
| -30.0                                                                                                                        | 30         |                | Continued on Sheet 2<br>Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                |                              | Blows Per Foot: Number<br>required to drive 1 3/8<br>ID split spoon w/140 lb.<br>hammer falling 30".<br>Note: W/T=Weight of |

| DRILLING LOG (Cont Sheet)           |             | FROM TOP OF HOLE |                                                                                                | 0.0 MLW                      |                                | FIGURE NO. SH-102                                                                                                                      |           |
|-------------------------------------|-------------|------------------|------------------------------------------------------------------------------------------------|------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|
| PROJECT<br>Savannah Harbor Widening |             |                  | INSTALLATION<br>Savannah, GA                                                                   |                              |                                | SHEET 2<br>OF 2 SHEETS                                                                                                                 |           |
| ELEVATION<br>-30.0                  | DEPTH<br>30 | LEGEND<br>c      | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                              | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f                                              |           |
|                                     |             |                  | CH-Dark gray silty fat clay<br>with some black wood chips                                      |                              | 8                              | Weight of tool<br>29.1'-30.6'.                                                                                                         | 6<br>W/T  |
|                                     | 35          |                  |                                                                                                |                              | 9                              | Weight of tool<br>30.5'-31.7'.                                                                                                         | 5<br>W/T  |
|                                     |             |                  |                                                                                                |                              |                                | Weight of tool<br>33.2'-35.7'                                                                                                          | 18<br>W/T |
|                                     |             |                  |                                                                                                |                              |                                | Weight of tool<br>37.2'-37.7'.                                                                                                         | 28<br>W/T |
|                                     | 40          |                  | SM-Gray silty coarse, medium<br>sand with some small clay<br>lenses (moderate silt<br>content) |                              | 10                             | Note: At 40.7'<br>cleaned out to 41.0'                                                                                                 | 36<br>36  |
|                                     |             |                  |                                                                                                |                              |                                | Next drive is<br>41.0'-42.5'.                                                                                                          | 60<br>40  |
|                                     | 45          |                  |                                                                                                |                              | 11                             |                                                                                                                                        | 51<br>77  |
|                                     | 50          |                  | Bottom of Hole: 50.0'                                                                          |                              |                                | Note: 6" diameter<br>casing must be advanced<br>1.5' after every drive.<br>Note: W/T = Weight of<br>tools including 140 lb.<br>hammer. | 97        |

Hole No. SH-103

| DRILLING LOG                                                                                                                 |       | DIVISION | INSTALLATION                                                                                     | SHEET 1<br>OF 2 SHEETS    |                                     |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------|--------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |          | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                    |                           |                                     |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>X 837283, Y 758195                                                                   |       |          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                           |                                     |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                           |                                     |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-103                                                            |       |          | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                   |                           | 11                                  |                                                                                                     |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |       |          | 14. TOTAL NUMBER CORE BOXES                                                                      |                           | 0                                   |                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |          | 15. ELEVATION GROUND WATER                                                                       |                           | N/A                                 |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN<br>46.8'                                                                                          |       |          | 16. DATE HOLE                                                                                    |                           | STARTED 4 Oct 83 COMPLETED 6 Oct 83 |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |          | 17. ELEVATION TOP OF HOLE                                                                        |                           | 0.0 MLW                             |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE<br>50.2'                                                                                              |       |          | 18. TOTAL CORE RECOVERY FOR BORING                                                               |                           | N/A %                               |                                                                                                     |
|                                                                                                                              |       |          | 19. SIGNATURE OF INSPECTOR<br>Thaddeus J. Zielonka <i>Thaddeus Zielonka</i>                      |                           |                                     |                                                                                                     |
| ELEVATION                                                                                                                    | DEPTH | LEGEND   | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.             | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| 0.0                                                                                                                          | 0     |          | Sea Water 0.0'-3.4'                                                                              |                           | JAR                                 | Blows                                                                                               |
| -3.4                                                                                                                         | 5     |          | Bottom of Harbor 3.4'                                                                            |                           |                                     |                                                                                                     |
|                                                                                                                              | 10    |          | SM-Green-gray silty sands<br>interlayered with dark gray<br>silt (MH)                            |                           | 1                                   | Note: W/T = Weight<br>of tools including W/T<br>140 lb. hammer.                                     |
|                                                                                                                              | 15    |          | MH stringer at 10.5'                                                                             |                           | 2                                   | Sample Lab W/T<br>No. Class LL PL PI                                                                |
|                                                                                                                              | 20    |          | Occasional thin (0.03')<br>MH layers<br>Somewhat coarser than<br>previous sample.                |                           | 3                                   | 2 SC-H 56 25 31 6'                                                                                  |
|                                                                                                                              | 25    |          | Fine to medium grained                                                                           |                           | 4                                   | 5 SP-SM NP NP NP 7                                                                                  |
|                                                                                                                              | 30    |          | Occasional dark gray silty<br>layer. Noticeably finer than<br>previous sample.                   |                           | 5                                   | 8 SP NP NP NP 7                                                                                     |
|                                                                                                                              | 35    |          |                                                                                                  |                           |                                     | 11 SM-H 60 41 19 9                                                                                  |
|                                                                                                                              | 40    |          |                                                                                                  |                           |                                     | 7                                                                                                   |
|                                                                                                                              | 45    |          |                                                                                                  |                           |                                     | 7                                                                                                   |
|                                                                                                                              | 50    |          |                                                                                                  |                           |                                     | 7                                                                                                   |
| -30.0                                                                                                                        | 30    |          | Continued on Sheet 2                                                                             |                           |                                     | Blows Per Foot: Number<br>required to drive 1 3/8<br>ID splitspoon w/140 lb.<br>hammer falling 30". |
|                                                                                                                              |       |          | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                           |                                     |                                                                                                     |

| DRILLING LOG (Cont. Sheet) |       | ELEVATION TOP OF HOLE |                                                    | Hole No.                |                         |                                                                                      |
|----------------------------|-------|-----------------------|----------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                    |       | INSTALLATION          |                                                    | SHEET 2                 |                         |                                                                                      |
| Savannah Harbor Widening   |       | Savannah District     |                                                    | OP 2 SHEETS             |                         |                                                                                      |
| ELEVATION                  | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)       | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -30.0                      | 30b   | c                     | d                                                  | e                       | JAR                     | f Blows                                                                              |
|                            |       |                       | SM-Green-gray fine to medium<br>grained silty sand |                         |                         | 22                                                                                   |
|                            |       |                       |                                                    |                         | 6                       | 34                                                                                   |
|                            |       |                       |                                                    |                         |                         | 20                                                                                   |
|                            | 35    |                       |                                                    |                         | 7                       | 35                                                                                   |
|                            |       |                       |                                                    |                         |                         | 47                                                                                   |
|                            |       |                       |                                                    |                         |                         | 54                                                                                   |
|                            | 40    |                       |                                                    |                         |                         | 49                                                                                   |
| -41.5                      |       |                       |                                                    |                         |                         | 59                                                                                   |
|                            |       |                       | SP-Green-gray medium sand                          |                         | 8                       | 43                                                                                   |
| -43.0                      |       |                       | SM-Green-gray fine to medium<br>grained silty sand |                         |                         | 11                                                                                   |
|                            | 45    |                       |                                                    |                         |                         | 48                                                                                   |
| -47.0                      |       |                       | GP-Poorly graded sandy<br>gravel                   |                         | 9                       | 58                                                                                   |
| -47.5                      |       |                       | SM-Gray fine silty sand                            |                         | 10                      | 59                                                                                   |
| -50.2                      | 50    |                       | Green-gray very fine grained<br>silty sand.        |                         | 11                      | 100/0.7                                                                              |
|                            |       |                       | Bottom of Hole: 50.2'                              |                         |                         |                                                                                      |

Hole No. SM-104

| DRILLING LOG                                                                                                           |              | DIVISION<br>South Atlantic |                                                                                                         | INSTALLATION<br>Savannah, GA                                                |                                     | SHEET 1<br>OF 2 SHEETS                                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                 |              |                            |                                                                                                         | 10. SIZE AND TYPE OF BIT: 1 3/8" ID spiltspoon                              |                                     |                                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X 832612 Y 759660                                                              |              |                            |                                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM = MSL)<br>MLW                            |                                     |                                                                                                                        |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                |              |                            |                                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                      |                                     |                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-104                                                      |              |                            |                                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>14                            |                                     | 13. DISTURBED<br>0                                                                                                     |  |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                       |              |                            |                                                                                                         | 14. TOTAL NUMBER CORE BOXES<br>0                                            |                                     |                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DES. FROM VERT. |              |                            |                                                                                                         | 15. ELEVATION GROUND WATER<br>N/A                                           |                                     |                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN<br>38.0'                                                                                    |              |                            |                                                                                                         | 16. DATE HOLE<br>STARTED 6 Oct 83 COMPLETED 7 Oct 83                        |                                     |                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                      |              |                            |                                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                        |                                     |                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE<br>49.5'                                                                                        |              |                            |                                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                   |                                     |                                                                                                                        |  |
|                                                                                                                        |              |                            |                                                                                                         | 19. SIGNATURE OF INSPECTOR<br>Thaddeus J. Zielonka <i>Thaddeus Zielonka</i> |                                     |                                                                                                                        |  |
| ELEVATION<br>0.0a                                                                                                      | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                       | % CORE<br>RECOVERY<br>e                                                     | BOX OR<br>SAMPLE<br>NO.<br>f<br>JHR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g<br>Blows                        |  |
|                                                                                                                        |              |                            | Sea Water 0.0'-11.5'                                                                                    |                                                                             |                                     | Sample Lab<br>No. Class LL PL PI<br>4 SP NP NP NP<br>7 SM-H NP NP NP<br>8 SM 47 31 16<br>11 SM 41 26 15<br>12 SM - - - |  |
| -11.5                                                                                                                  | 10           |                            | Bottom of Harbor 11.5'                                                                                  |                                                                             |                                     |                                                                                                                        |  |
|                                                                                                                        | 15           |                            | SM-Dark gray fine to medium grained silty sand with MH streaks                                          |                                                                             | 1                                   | Note: W/T Weight of W/T tools and .140 lb. hammer.                                                                     |  |
|                                                                                                                        |              |                            | Color change to gray. Fewer streaks of MH. Slightly coarser.                                            |                                                                             | 2                                   | 12                                                                                                                     |  |
|                                                                                                                        |              |                            | Change to green-gray fine to coarse grained silty sand with some gravel. Wood chips                     |                                                                             | 3                                   | 12                                                                                                                     |  |
|                                                                                                                        |              |                            |                                                                                                         |                                                                             | 4                                   | 5                                                                                                                      |  |
|                                                                                                                        | 20           |                            |                                                                                                         |                                                                             |                                     | 9                                                                                                                      |  |
|                                                                                                                        |              |                            |                                                                                                         |                                                                             | 5                                   | 18                                                                                                                     |  |
|                                                                                                                        |              |                            |                                                                                                         |                                                                             | 6                                   | 47                                                                                                                     |  |
| -23.5                                                                                                                  |              |                            | GC-Dark gray clayey gravel                                                                              |                                                                             | 7                                   | 16                                                                                                                     |  |
| -25.0                                                                                                                  | 25           |                            | SM-Green-gray very fine silty sand.                                                                     |                                                                             | 8                                   | 29                                                                                                                     |  |
|                                                                                                                        |              |                            |                                                                                                         |                                                                             |                                     | 70                                                                                                                     |  |
|                                                                                                                        |              |                            |                                                                                                         |                                                                             |                                     | 69                                                                                                                     |  |
| -30.0                                                                                                                  | 30           |                            | Continued on Sheet 2<br>Note: Soils field classified in accordance with the Soil Classification System. |                                                                             |                                     | 100/0.5                                                                                                                |  |
|                                                                                                                        |              |                            |                                                                                                         |                                                                             |                                     | Blows Per Foot: Number " required to drive 1 3/8" ID spiltspoon w/140 lb. hammer falling. 30".                         |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                 | 0.0 MLW                 |                                | Hole No. SH-104                                                                      |         |
|---------------------------|-------|-----------------------|-------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|---------|
| Project                   |       |                       | Installation                                    |                         |                                | Sheet 2 of 2 Sheets                                                                  |         |
| Savannah Harbor Widening  |       |                       | Savannah District                               |                         |                                |                                                                                      |         |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)    | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |         |
| -30.0                     | 30 b  | c                     | d                                               | e                       |                                | f                                                                                    | Blows   |
|                           |       |                       | SM-Green-gray very fine silty sand.             |                         |                                |                                                                                      | 100     |
| -33.0                     |       |                       |                                                 |                         |                                |                                                                                      | 100/0.8 |
| -34.5                     |       |                       | GM-Green-gray silty sandy                       |                         | 9                              |                                                                                      | 100/0.5 |
| -35.2                     | 35    |                       | gravel                                          |                         | 10                             |                                                                                      |         |
| -36.0                     |       |                       | GP-Gray poorly graded sandy gravel              |                         | 11                             |                                                                                      | 100/0.5 |
|                           |       |                       | GM-Green-gray silty sandy gravel with some clay |                         | 12                             |                                                                                      | 100/0.7 |
|                           | 40    |                       | SM-Green-gray fine silty sand.                  |                         |                                |                                                                                      | 80      |
|                           |       |                       |                                                 |                         | 13                             |                                                                                      | 57      |
|                           |       |                       |                                                 |                         |                                |                                                                                      | 90      |
|                           |       |                       |                                                 |                         |                                |                                                                                      | 79      |
|                           | 45    |                       |                                                 |                         |                                |                                                                                      | 35      |
|                           |       |                       |                                                 |                         | 14                             |                                                                                      | 41      |
|                           |       |                       |                                                 |                         |                                |                                                                                      | 36      |
| -49.5                     | 50    |                       |                                                 |                         |                                |                                                                                      | 31      |
|                           |       |                       | Bottom of Hole: 49.5'                           |                         |                                |                                                                                      |         |



| DRILLING LOG                                                                                                                 |  | DIVISION<br>South Atlantic                                                            | INSTALLATION<br>Savannah, Ga | Hole No. <b>SH-106</b><br>SHEET <b>1</b><br>OF <b>1</b> SHEETS |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------|
| 1. PROJECT<br><b>Savannah Harbor Widening</b>                                                                                |  | 10. SIZE AND TYPE OF BIT <b>1 3/8" ID split spoon</b>                                 |                              |                                                                |
| 2. LOCATION (Coordinates or Station)<br><b>Y-834350 Y-759005</b>                                                             |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                              |                              |                                                                |
| 3. DRILLING AGENCY<br><b>Savannah District</b>                                                                               |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>Failing 314</b>                         |                              |                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>Sh-106</b>                                                     |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED <b>4</b> UNDISTURBED <b>0</b> |                              |                                                                |
| 5. NAME OF DRILLER<br><b>Earl Maulden and Avery Yates</b>                                                                    |  | 14. TOTAL NUMBER CORE BOXES <b>0</b>                                                  |                              |                                                                |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 15. ELEVATION GROUND WATER <b>N/A</b>                                                 |                              |                                                                |
| 7. THICKNESS OF OVERBURDEN<br><b>14.4'</b>                                                                                   |  | 16. DATE HOLE<br>STARTED <b>12 Oct 83</b> COMPLETED <b>16 Oct 83</b>                  |                              |                                                                |
| 8. DEPTH DRILLED INTO ROCK<br><b>0.0'</b>                                                                                    |  | 17. ELEVATION TOP OF HOLE <b>0.0 MLW</b>                                              |                              |                                                                |
| 9. TOTAL DEPTH OF HOLE<br><b>50.5</b>                                                                                        |  | 18. TOTAL CORE RECOVERY FOR BORING <b>N/A</b>                                         |                              |                                                                |
|                                                                                                                              |  | 19. SIGNATURE OF INSPECTOR <b>Thaddeus J. Zielonka, Larry Benjamin</b>                |                              |                                                                |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                            | SCORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)           |
|-----------|-------|--------|-----------------------------------------------------------------------------------------|----------------|-------------------|---------------------------------------------------------------------------------------------|
| 0.0       | 0     |        | Sea Water 0.0'-36.1'                                                                    |                |                   | Note: Change of scale at 30.0'                                                              |
| 30        |       |        |                                                                                         |                |                   |                                                                                             |
| 35        |       |        | Bottom of Harbor 36.1'                                                                  |                |                   |                                                                                             |
| -36.1     |       |        | SM-Tan fine to coarse grained silty sand with wood chips and occasional gravel          |                | 1                 | Note: W/T = Weight W/T of tools and 140 lb 12 hammer.                                       |
| 40        |       |        |                                                                                         |                |                   |                                                                                             |
|           |       |        | Fine to medium grained below 41.5'.                                                     |                | 2                 |                                                                                             |
| 45        |       |        |                                                                                         |                | 3                 |                                                                                             |
|           |       |        | Trace of river gravel                                                                   |                | 4                 |                                                                                             |
| -50.5     | 50    |        | Bottom of Hole: 50.5'                                                                   |                |                   | Blows Per Foot: Number required to drive 1 3/8" ID split spoon w/140 lb hammer falling 30". |
|           |       |        | Note: Soils field classified in accordance with the Unified Soil Classification System. |                |                   |                                                                                             |

| DRILLING LOG                                                                                                                   |       | DIVISION<br>South Atlantic |                                                                                                                 | INSTALLATION<br>Savannah District                                        |                          | Hole No. SH-122<br>SHEET 1 OF 2 SHEETS                                                       |       |
|--------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                         |       |                            |                                                                                                                 | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Spitspoon                          |                          |                                                                                              |       |
| 2. LOCATION (Coordinates or Station)<br>X-835610 Y-758830                                                                      |       |                            |                                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or BSL)<br>M.T.L.                     |                          |                                                                                              |       |
| 3. DRILLING AGENCY<br>Savannah District                                                                                        |       |                            |                                                                                                                 | 12. MANUAL DRIFT DESIGNATION OF DRILL<br>CNS 650                         |                          |                                                                                              |       |
| 4. HOLE NO. (As shown on drawing title and title index)<br>SH-122                                                              |       |                            |                                                                                                                 | 13. TO BUREAU OF MINES SAMPLE TAKEN<br>DISTURBED _____ UNDISTURBED _____ |                          |                                                                                              |       |
| 5. NAME OF DRILLER<br>H. Ross Brown                                                                                            |       |                            |                                                                                                                 | 14. TOOL NUMBER DRE BOX NO.<br>N/A                                       |                          |                                                                                              |       |
| 6. DIRECT INCH OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                 | 15. ELEVATION WRT. HD WATER<br>N/A                                       |                          |                                                                                              |       |
| 7. THICKNESS OF OVERBURDEN<br>65.0                                                                                             |       |                            |                                                                                                                 | 16. DATE HOLE<br>STARTED 2 Nov 83 COMPLETED 3 Nov 83                     |                          |                                                                                              |       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0                                                                                              |       |                            |                                                                                                                 | 17. ELEVATION TOP OF HOLE<br>15.1                                        |                          |                                                                                              |       |
| 9. TOTAL DEPTH OF HOLE<br>65.0                                                                                                 |       |                            |                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                              |                          |                                                                                              |       |
|                                                                                                                                |       |                            |                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>James E. Polen                             |                          |                                                                                              |       |
| ELEVATION                                                                                                                      | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                    | % CORE RECOVERY                                                          | BOX OR SAMPLE NO.<br>J&K | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)            |       |
| 15.1                                                                                                                           | 0.0   |                            |                                                                                                                 |                                                                          |                          |                                                                                              | BLOWS |
| 12.1                                                                                                                           | 3.0'  |                            | CL-Dark brown lean clay with some silt and fine sand.                                                           |                                                                          | 1                        | W.T. 7.0'                                                                                    | 7     |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | Date 2 Nov. 83                                                                               | 10    |
|                                                                                                                                |       |                            | SM-Dark brown silty medium fine sand with some clay.                                                            |                                                                          | 2                        | Depth to water during drilling                                                               | 10    |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          | 3                        | W.T. 6.3'                                                                                    | 11    |
| 6.1                                                                                                                            | 9.0'  |                            | SC-Gray clayey coarse-medium sand.                                                                              |                                                                          | 4                        | Water table reading 24 hrs. after hole completed.                                            | 11    |
|                                                                                                                                |       |                            | With wood chips and fibers.                                                                                     |                                                                          |                          | Note: Fill material 0.0'-4.0'. Mixed mud at 7.5'.                                            | 4     |
| 0.1                                                                                                                            | 15.0' |                            | MH-Dark green fat clayey silt with a trace of wood chips and fibers.                                            |                                                                          | 5                        | Note: W/T=Weight of Tools.                                                                   | 2     |
| -3.9                                                                                                                           | 19.0' |                            |                                                                                                                 |                                                                          | 6                        | SAMPLE LAB                                                                                   |       |
|                                                                                                                                |       |                            | SM-Dark green silty coarse medium sand. (moderate silt content).                                                |                                                                          | 7                        | No Class I.L. PL. %                                                                          |       |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 1 CL 37 18 19                                                                                | 16    |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 4 SC-H 56 25 31                                                                              |       |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 6 MH 93 44 49                                                                                | 13    |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 8 SM-H 58 11 27                                                                              |       |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 9 CH 170 44 35                                                                               | 11    |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 14 SP-GM NP NP 40                                                                            |       |
|                                                                                                                                |       |                            |                                                                                                                 |                                                                          |                          | 15 SP-GM NP NP 40                                                                            | 11    |
| -8.4                                                                                                                           | 23.5' |                            | SC-Alternating layers of dark green fat clay and medium grained silty sand.                                     |                                                                          | 8                        |                                                                                              | 14    |
|                                                                                                                                |       |                            | MH-Dark green fat clayey silt with 25% medium sand.                                                             |                                                                          |                          |                                                                                              | 14    |
| 11.4                                                                                                                           |       |                            |                                                                                                                 |                                                                          |                          |                                                                                              |       |
| 11.9                                                                                                                           | 30.0' |                            | Continued on sheet 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                          | 9                        | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID spitspoon w/14 lb. hammer falling 30". | 11    |



| DRILLING LOG                                                                                                           |       | DIVISION<br>South Atlantic |                                                                           | INSTALLATION<br>Savannah Dist. 1st                                                             |                          | FORM NO. SH-123<br>SHEET 1<br>OF 2 SHEETS                                         |  |
|------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                 |       |                            |                                                                           | 10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon                                                  |                          |                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>Y-R33424 Y-759382                                                              |       |                            |                                                                           | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL)<br>MSL                                              |                          |                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                |       |                            |                                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 550                                             |                          |                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title) and title number<br>SH-123                                                     |       |                            |                                                                           | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED 17 UNDISTURBED 0                        |                          |                                                                                   |  |
| 5. NAME OF DRILLER<br>P. Bountree                                                                                      |       |                            |                                                                           | 14. TOTAL NUMBER CORE BOXES<br>N/A                                                             |                          |                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DES. FROM VERT. |       |                            |                                                                           | 15. ELEVATION GROUND WATER<br>N/A                                                              |                          |                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN<br>63.0'                                                                                    |       |                            |                                                                           | 16. DATE HOLE<br>STARTED 4 Nov. 83 COMPLETED 5 Nov. 83                                         |                          |                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                     |       |                            |                                                                           | 17. ELEVATION TOP OF HOLE<br>12.7'                                                             |                          |                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE<br>63.0'                                                                                        |       |                            |                                                                           | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                      |                          |                                                                                   |  |
|                                                                                                                        |       |                            |                                                                           | 19. SIGNATURE OF INSPECTOR<br>James E. Rolan                                                   |                          |                                                                                   |  |
| ELEVATION                                                                                                              | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                              | SCORE RECOVERY                                                                                 | BOX OR SAMPLE NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of overburden, etc., if significant) |  |
| 12.3                                                                                                                   | 0     |                            |                                                                           |                                                                                                |                          |                                                                                   |  |
| 9.3                                                                                                                    |       |                            | SM-Brown/black silty coarse fine sand (Moderate silt content). 3.0'       |                                                                                                | 1                        | 14                                                                                |  |
| 7.8                                                                                                                    | 5     |                            | SC-Dark brown clayey medium sand. 4.5'                                    |                                                                                                | 2                        | 8                                                                                 |  |
| 4.8                                                                                                                    |       |                            | SM-Gray silty medium sand saturated. (Moderate silt content). 7.5'        |                                                                                                | 3                        | 9                                                                                 |  |
| 3.3                                                                                                                    | 10    |                            | MH-Dark gray fat clayey silt. 9.0'                                        |                                                                                                | 4                        | 7                                                                                 |  |
|                                                                                                                        |       |                            | SC-Alternating lenses of dark gray fat clay and silty medium sand. 13.5'  |                                                                                                | 5                        | 3                                                                                 |  |
| -1.2                                                                                                                   | 15    |                            | SM-Gray silty medium sand moderate silt content. High silt content. 21.0' |                                                                                                | 6                        | 3                                                                                 |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | Date 4 Nov. 83                                                                    |  |
| -8.7                                                                                                                   | 20    |                            | MH-Dark gray fat clayey silt with a trace of sand. 24.0'                  |                                                                                                | 7                        | Depth to water during drilling                                                    |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | W.T. 4.0'                                                                         |  |
| -11.7                                                                                                                  | 25    |                            | SM-Gray silty medium fine sand with lenses of clay 10%. 102.              |                                                                                                | 8                        | Water table reading 24 hrs. after hole completed.                                 |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | Note: Mixed drilling mud at 21.0'.                                                |  |
| -17.7                                                                                                                  | 30    |                            |                                                                           |                                                                                                | 9                        | Sample Lab                                                                        |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | No. Class LL PL FI                                                                |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                | 10                       | 2 SM NP NP NP 5                                                                   |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 5 SM NP NP NP 5                                                                   |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 6 SP-SN NP NP NP 5                                                                |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 8 MH 124 60 64 6                                                                  |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 11 SM NP NP NP 7                                                                  |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 13 SM NP NP NP 7                                                                  |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 17 MH 107 58 49 12                                                                |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 28                                                                                |  |
|                                                                                                                        |       |                            |                                                                           |                                                                                                |                          | 24                                                                                |  |
| Continued on sheet 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System.        |       |                            |                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 10 lb. hammer falling 30". |                          |                                                                                   |  |

| DRILLING LOG (Cont Sheet)        |       | ELEVATION TOP OF HOLE          |                                                                                         | Hole No. SH-123         |                         |                                                                                               |
|----------------------------------|-------|--------------------------------|-----------------------------------------------------------------------------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor Widening |       | INSTALLATION Savannah District |                                                                                         | SHEET 2 OF 2 SHEETS     |                         |                                                                                               |
| ELEVATION                        | DEPTH | LEGEND                         | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)          |
| -17.7                            | 30 b  | c                              | d                                                                                       | e                       | JAR                     | f                                                                                             |
|                                  |       |                                | SM-Gray silty medium fine sand with lenses of clay 10%.                                 |                         |                         | 15                                                                                            |
|                                  |       |                                | Very high silt content                                                                  |                         |                         | 5                                                                                             |
|                                  | 35    |                                |                                                                                         |                         | 11                      | 11                                                                                            |
|                                  |       |                                | Gray/brown with wood chips, fibers and roots.                                           |                         |                         | 5                                                                                             |
|                                  |       |                                |                                                                                         |                         |                         | 8                                                                                             |
|                                  | 40    |                                |                                                                                         |                         | 12                      | 8                                                                                             |
|                                  |       |                                |                                                                                         |                         |                         | 4                                                                                             |
| -29.7                            |       |                                | 42.0'                                                                                   |                         |                         | 5                                                                                             |
|                                  |       |                                | Green silty fine sand very high silt content.                                           |                         | 13                      | 34                                                                                            |
|                                  | 45    |                                |                                                                                         |                         |                         | 50                                                                                            |
|                                  |       |                                |                                                                                         |                         |                         | 66                                                                                            |
|                                  | 50    |                                |                                                                                         |                         | 14                      | 82                                                                                            |
|                                  |       |                                |                                                                                         |                         |                         | 65                                                                                            |
|                                  |       |                                |                                                                                         |                         |                         | 49                                                                                            |
|                                  | 55    |                                |                                                                                         |                         | 15                      | 59                                                                                            |
|                                  |       |                                |                                                                                         |                         |                         | 63                                                                                            |
|                                  |       |                                |                                                                                         |                         |                         | 53                                                                                            |
|                                  |       |                                |                                                                                         |                         |                         | 43                                                                                            |
|                                  | 60    |                                |                                                                                         |                         |                         | 43                                                                                            |
| -49.2                            |       |                                | 61.5'                                                                                   |                         | 16                      | 43                                                                                            |
| -50.7                            |       |                                | ML-Green sandy fine silt.                                                               |                         | 17                      | 44                                                                                            |
|                                  |       |                                | Bottom of Boring 63.0'                                                                  |                         |                         |                                                                                               |
|                                  |       |                                | Note: Soils field classified in accordance with the Unified Soil Classification System. |                         |                         | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/10 lb. hammer falling 30". |

| DRILLING LOG                                          |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Savannah District             |  | SHEET<br>1<br>OF 2 SHEETS |  |
|-------------------------------------------------------|--|----------------------------|--|-----------------------------------------------|--|---------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                |  |                            |  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon |  |                           |  |
| 2. LOCATION (City, coordinates or State)              |  |                            |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)    |  |                           |  |
| V-814005 V-759521                                     |  |                            |  | 12. MANUFACTURE DESIGNATION OF DRILL          |  |                           |  |
| 3. DRILLING AGENCY                                    |  |                            |  | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN     |  |                           |  |
| Savannah District                                     |  |                            |  | 14. T.C. - NUMBER CORE BOXES                  |  |                           |  |
| 4. HOLE NO. (As shown on drawing title and file) none |  |                            |  | 15. ELEVATION GROUND WATER                    |  |                           |  |
| SH-124                                                |  |                            |  | 16. DATE HOLE                                 |  |                           |  |
| 5. NAME OF DRILLER                                    |  |                            |  | 17. ELEVATION TOP OF HOLE                     |  |                           |  |
| P. Rountree                                           |  |                            |  | 18. TOTAL CORE RECOVERY FOR BORING            |  |                           |  |
| 6. DIRECTION OF HOLE                                  |  |                            |  | 19. SIGNATURE OF INSPECTOR                    |  |                           |  |
| Vertical Inclined DEG. FROM VERT.                     |  |                            |  | James E. Bolen                                |  |                           |  |
| 7. THICKNESS OF OVERBURDEN                            |  |                            |  | 10.5'                                         |  |                           |  |
| 8. DEPTH DRILLED INTO ROCK                            |  |                            |  | 19.5'                                         |  |                           |  |
| 9. TOTAL DEPTH OF HOLE                                |  |                            |  | 30'                                           |  |                           |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)            | NO. OF<br>CORE<br>RECOVERY | NO. OF<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
|-----------|-------|--------|---------------------------------------------------------|----------------------------|-------------------------|--------------------------------------------------------------------------------------|
| 10.7      | 0     | b      | c                                                       |                            | 1                       |                                                                                      |
| 7.7       |       |        | SM-Gray brown silty medium fine sand.                   |                            |                         |                                                                                      |
| 6.2       |       |        | With wood chips and roots                               |                            |                         |                                                                                      |
|           | 5     |        | SC- Gray clayey medium fine sand.                       |                            | 2                       | W.T. 3.0'                                                                            |
|           |       |        | 4.5'                                                    |                            | 3                       | Date 5 Nov. 83                                                                       |
|           |       |        | MB- Dark gray fat clayey silt with wood chips and roots |                            |                         | Depth to water during drilling                                                       |
|           | 10    |        |                                                         |                            | 4                       |                                                                                      |
| 0.3       |       |        |                                                         |                            | 5                       | Note: Mixed mud at 19.5'.                                                            |
|           |       |        | SM- Gray silty medium fine sand (high silt content).    |                            |                         |                                                                                      |
|           | 15    |        |                                                         |                            | 6                       | Sample Lab                                                                           |
|           |       |        |                                                         |                            |                         | No. Class LL PL PI                                                                   |
|           |       |        |                                                         |                            | 7                       | MI 128 56 72                                                                         |
|           |       |        |                                                         |                            | 8                       | SM NP NP NP 9                                                                        |
|           |       |        |                                                         |                            | 9                       | SH 151 66 85                                                                         |
|           |       |        |                                                         |                            | 10                      | SP-SH NP NP NP 10                                                                    |
|           |       |        |                                                         |                            | 11                      | MI 31 27 4                                                                           |
|           |       |        |                                                         |                            | 12                      | MI 98 61 37 7                                                                        |
| -8.8      | 20    |        | MB-Dark gray fat clayey silt.                           |                            | 7                       |                                                                                      |
| -10.3     |       |        |                                                         |                            | 8                       |                                                                                      |
|           |       |        | SM- Gray silty coarse medium sand.                      |                            |                         |                                                                                      |
|           | 25    |        |                                                         |                            | 9                       |                                                                                      |
|           |       |        |                                                         |                            | 10                      |                                                                                      |
| -19.3     | 30    |        |                                                         |                            |                         |                                                                                      |

Continued on sheet 2

Note: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT

Number required to drive 1 3/8" ID splitspoon w/ 14 lb. hammer falline 30"

| DRILLING LOG (Cont Sheet)           |       |        | ELEVATION TOP OF HOLE<br>10.7'                                                                |                               | Hole No. SH-124                             |                                                                                                      |
|-------------------------------------|-------|--------|-----------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       |        | INSTALLATION<br>Savannah District                                                             |                               | SHEET 2<br>OF 2 SHEETS                      |                                                                                                      |
| ELEVATION                           | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVER<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>TAB <sup>f</sup> | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f            |
| -19.3                               | 30b   | c      |                                                                                               |                               |                                             | BLOWS                                                                                                |
|                                     |       |        | SM- Grayish green silty<br>coarse medium sand.                                                |                               |                                             | 32                                                                                                   |
|                                     |       |        |                                                                                               |                               |                                             | 15                                                                                                   |
|                                     |       |        |                                                                                               |                               |                                             | 18                                                                                                   |
|                                     | 35    |        | 36.0'                                                                                         |                               | 11                                          | 48                                                                                                   |
| -25.3                               |       |        | Green silty fine sand (very<br>high silt content)                                             |                               | 12                                          | 77                                                                                                   |
|                                     | 40    |        |                                                                                               |                               | 13                                          | 85                                                                                                   |
|                                     |       |        |                                                                                               |                               |                                             | 94                                                                                                   |
|                                     |       |        |                                                                                               |                               |                                             | 100                                                                                                  |
|                                     |       |        |                                                                                               |                               |                                             | 100/0.8                                                                                              |
|                                     | 45    |        |                                                                                               |                               | 14                                          | 100/0.8                                                                                              |
|                                     |       |        |                                                                                               |                               |                                             | 100/0.7                                                                                              |
|                                     |       |        |                                                                                               |                               |                                             | 100/0.7                                                                                              |
|                                     |       |        |                                                                                               |                               |                                             | 100/0.7                                                                                              |
|                                     | 50    |        |                                                                                               |                               | 15                                          | 100/0.7                                                                                              |
|                                     |       |        |                                                                                               |                               |                                             | 100/0.8                                                                                              |
|                                     |       |        |                                                                                               |                               |                                             | 90                                                                                                   |
|                                     | 55    |        | 57.0'                                                                                         |                               | 16                                          | 80                                                                                                   |
| -46.3                               |       |        |                                                                                               |                               |                                             | 64                                                                                                   |
|                                     |       |        | ML- Dark green clayey silt<br>with 25% fine sand.                                             |                               | 17                                          | 50                                                                                                   |
|                                     | 60    |        |                                                                                               |                               |                                             | 40                                                                                                   |
| -50.8                               |       |        |                                                                                               |                               | 18                                          | 30                                                                                                   |
|                                     |       |        | Bottom of boring 61.5'                                                                        |                               |                                             |                                                                                                      |
|                                     |       |        | Note: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                               |                                             | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/140<br>lb. hammer falling 30". |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic                                 |                                                                                            | INSTALLATION<br>Savannah River                                        |                         | SHEET 1<br>OF 2 SHEETS                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                                                            |                                                                                            | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon                            |                         |                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X-831931 Y-760221                                                                    |       |                                                            |                                                                                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                     |                         |                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                                                            |                                                                                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                |                         |                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                                                      |       | SH-128                                                     |                                                                                            | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                        |                         | DISTURBED 16<br>UNDISTURBED 0                                                        |  |
| 5. NAME OF TRILLER<br>C.D. Justice                                                                                           |       |                                                            |                                                                                            | 14. TOTAL NUMBER CORE BOXES                                           |                         |                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                                                            |                                                                                            | 15. ELEVATION GROUND WATER                                            |                         |                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 64.5'                                                                                             |       |                                                            |                                                                                            | 16. DATE HOLE STARTED 15 May 1984 COMPLETED 17 May 1984               |                         |                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                                                            |                                                                                            | 17. ELEVATION TOP OF HOLE 12.6'                                       |                         |                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 64.5'                                                                                                 |       |                                                            |                                                                                            | 18. TOTAL CORE RECOVERY FOR BORING %                                  |                         |                                                                                      |  |
|                                                                                                                              |       |                                                            |                                                                                            | 19. SIGNATURE OF INSPECTOR<br>Lou Archambault                         |                         |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                     | CLASSIFICATION OF MATERIALS<br>(Description)                                               | % CORE<br>RECOVERY                                                    | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| 12.6'                                                                                                                        | 0'    | c                                                          |                                                                                            |                                                                       | JAR                     | BLOWS                                                                                |  |
| 6.6'                                                                                                                         | 5     |                                                            | SM-Tan & brown, fine to med. grained, dry, silty sand w/scattered gravel, twigs & grasses. |                                                                       | 1                       | 28                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 9                                                                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 7                                                                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 5                                                                                    |  |
| -0.9'                                                                                                                        | 10    |                                                            | Brown with shell fragments.                                                                |                                                                       | 2                       | W.T. 6'                                                                              |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 2                                                                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 1                                                                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 0                                                                                    |  |
| -3.4'                                                                                                                        | 15    |                                                            | CH-Grey fat clay w/organics.                                                               |                                                                       | 3                       | W.T. 6'                                                                              |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 0                                                                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 8                                                                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 1                                                                                    |  |
| -11.9'                                                                                                                       | 20    |                                                            | SP-SM-Grey, green med.-poorly graded silty sand w/scattered mica.                          |                                                                       | 4                       | Water table reading 72 hrs. after hole completed.                                    |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 14                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 32                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 40                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 20                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 23                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 17                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 10                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 16                                                                                   |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         | 10                                                                                   |  |
| 30                                                                                                                           |       | SW-SM-Grey green fine to coarse grained silty sand w/mica. |                                                                                            | 6                                                                     | 2                       |                                                                                      |  |
|                                                                                                                              |       |                                                            |                                                                                            |                                                                       |                         |                                                                                      |  |
| (Con't, on sht. 2)                                                                                                           |       |                                                            |                                                                                            |                                                                       |                         |                                                                                      |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System                                       |       |                                                            |                                                                                            | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/14 |                         |                                                                                      |  |



| DRILLING LOG (Cont Sheet)           |               | ELEVATION TOP OF HOLE   |                                                                    | Hole No.                       |                              |                                                                                           |       |
|-------------------------------------|---------------|-------------------------|--------------------------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|-------|
| PROJECT<br>Savannah Harbor Widening |               | 12.6'                   |                                                                    | SH-128                         |                              |                                                                                           |       |
| INSTALLATION<br>Savannah River      |               | Sheet 2<br>OF<br>SHEETS |                                                                    |                                |                              |                                                                                           |       |
| ELEVATION<br>a                      | DEPTH<br>30 b | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                  | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>JAR<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g | BLOWS |
|                                     |               |                         | W/wood fragments                                                   |                                |                              |                                                                                           | 16    |
| -20.4'                              |               |                         |                                                                    |                                |                              |                                                                                           | 22    |
| -21.9'                              |               |                         | SP-SM-Grey green med.<br>grained, silty sand w/mica<br>throughout. |                                | 7                            |                                                                                           | 35    |
|                                     | 35            |                         | SW-SM-fine to med.grained<br>silty sand w/mica.                    |                                |                              |                                                                                           | 33    |
|                                     |               |                         | Occassional gravel.                                                |                                | 8                            |                                                                                           | 31    |
|                                     | 40            |                         |                                                                    |                                |                              |                                                                                           | 37    |
|                                     |               |                         |                                                                    |                                |                              |                                                                                           | 22    |
|                                     |               |                         |                                                                    |                                | 9                            |                                                                                           | 20    |
|                                     | 45            |                         |                                                                    |                                |                              |                                                                                           | 37    |
|                                     |               |                         |                                                                    |                                |                              |                                                                                           | 25    |
|                                     |               |                         | Tan coarse - med.                                                  |                                | 10                           |                                                                                           | 27    |
|                                     |               |                         |                                                                    |                                |                              |                                                                                           | 37    |
| -36.9'                              | 50            |                         | SP-SM-Light grey coarse<br>grained silty sand.                     |                                |                              |                                                                                           | 44    |
|                                     |               |                         |                                                                    |                                | 11                           |                                                                                           | 40    |
|                                     |               |                         |                                                                    |                                |                              |                                                                                           | 26    |
|                                     |               |                         |                                                                    |                                |                              |                                                                                           | 21    |
|                                     | 55            |                         | Tan                                                                |                                |                              |                                                                                           | 37    |
|                                     |               |                         |                                                                    |                                | 12                           |                                                                                           | 43    |
|                                     |               |                         | Medium grained.                                                    |                                |                              |                                                                                           | 31    |
|                                     |               |                         |                                                                    |                                |                              |                                                                                           | 36    |
| -47.4'                              | 60            |                         | SW-SM-Grey green well<br>graded silty sand.                        |                                | 13                           |                                                                                           | 10    |
| -48.9'                              |               |                         | CH-Grey fat clay.                                                  |                                | 14                           |                                                                                           | 1     |
| -50.4'                              |               |                         | SW-SM-Grey green well<br>graded silty sand.                        |                                | 15                           |                                                                                           | 31    |
| -51.4'                              |               |                         | CH-Green fat clay.                                                 |                                | 16                           |                                                                                           |       |
| -51.9'                              | 65            |                         | Bottom of Hole 64.5'                                               |                                |                              |                                                                                           |       |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                    | INSTALLATION<br>Savannah, Ga.                                      |                   | Hole No. SH-138                                                                                                                                  |     | SHEET 1 OF 2 SHEETS |    |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------|----|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                    | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 6" spiral              |                   |                                                                                                                                                  |     |                     |    |
| 2. LOCATION (Coordinates or Station)<br>X=831848 Y=760405                                                                    |       |                            |                                                                                    | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW auger & fishtail |                   |                                                                                                                                                  |     |                     |    |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                    | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314             |                   |                                                                                                                                                  |     |                     |    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-138                                                            |       |                            |                                                                                    | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                         |                   | DISTURBED<br>18                                                                                                                                  |     | UNDISTURBED<br>1    |    |
| 5. NAME OF DRILLER<br>J. Butts                                                                                               |       |                            |                                                                                    | 14. TOTAL NUMBER CORE BOXES<br>0                                   |                   | 15. ELEVATION GROUND WATER<br>See Remarks                                                                                                        |     |                     |    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                    | 16. DATE HOLE<br>STARTED 12 Mar 1987<br>COMPLETED 14 Mar 1987      |                   | 17. ELEVATION TOP OF HOLE 13.0'                                                                                                                  |     |                     |    |
| 7. THICKNESS OF OVERBURDEN 63.0'                                                                                             |       |                            |                                                                                    | 18. TOTAL CORE RECOVERY FOR BORING N/A                             |                   | 19. SIGNATURE OF INSPECTOR<br>T. Nicholson (0-24') J. Arthur (24-63')                                                                            |     |                     |    |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                    |                                                                    |                   |                                                                                                                                                  |     |                     |    |
| 9. TOTAL DEPTH OF HOLE 63.0'                                                                                                 |       |                            |                                                                                    |                                                                    |                   |                                                                                                                                                  |     |                     |    |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS (Description)                                          | % CORE RECOVERY                                                    | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                   |     |                     |    |
| 13.0'                                                                                                                        | 0'    |                            |                                                                                    |                                                                    | JAR               | BLOWS                                                                                                                                            |     |                     |    |
|                                                                                                                              |       |                            | CH-Dark brown fat clay, some roots, brick fragments & sand, dry.                   |                                                                    | 1                 | Water level 4.8' depth to water during drilling.                                                                                                 |     |                     |    |
| 9.5'                                                                                                                         |       |                            |                                                                                    |                                                                    | 2                 |                                                                                                                                                  |     |                     |    |
| 8.5'                                                                                                                         |       |                            | SP-Tan poorly graded fine sand, some brick fragments, dry.                         |                                                                    | 3                 | No 24 hour water level taken.                                                                                                                    |     |                     |    |
| 7.0'                                                                                                                         |       |                            | Dark brown, fine to med. grained, trace of clay, damp.                             |                                                                    |                   | Backfilled hole/w grout after completion of boring.                                                                                              |     |                     |    |
| 5.5'                                                                                                                         |       |                            | Trace of roots & fine gravel, wet.                                                 |                                                                    | 4                 |                                                                                                                                                  |     |                     |    |
| 4.0'                                                                                                                         |       |                            |                                                                                    |                                                                    |                   | 12.0'-Began using Revert mud.                                                                                                                    |     |                     |    |
| 2.5'                                                                                                                         |       |                            | CH-Brown fat clay, trace of fine to coarse gravel & roots, wet.                    |                                                                    |                   | Undisturbed sample taken from 24.0' to 26.0' w/5" shelby tube. Recovered 1.8'. Jar sample from 24.0' to 24.1' & 25.7' to 25.8' from shelby tube. |     |                     |    |
| -0.5'                                                                                                                        |       |                            | Some roots, no gravel.                                                             |                                                                    | 5                 |                                                                                                                                                  |     |                     |    |
| -2.0'                                                                                                                        |       |                            | Greenish grey, no roots, 3" piece of wood @ 11.0'.                                 |                                                                    | 6                 |                                                                                                                                                  |     |                     |    |
| -3.5'                                                                                                                        |       |                            | Trace of fine to med. sand.                                                        |                                                                    |                   |                                                                                                                                                  |     |                     |    |
|                                                                                                                              |       |                            | Trace of fine to coarse gravel.                                                    |                                                                    |                   |                                                                                                                                                  |     |                     |    |
| -6.5'                                                                                                                        |       |                            | SM-Greyish green silty fine sand, trace of fine to coarse gravel, wet.             |                                                                    | 7                 | LAB CLASSIFICATION                                                                                                                               |     |                     |    |
|                                                                                                                              |       |                            | Some fine to coarse gravel, trace of clay in thin layers.                          |                                                                    |                   | No. Class LL PL PI                                                                                                                               |     |                     |    |
|                                                                                                                              |       |                            |                                                                                    |                                                                    | 1                 | SM                                                                                                                                               | NP  | NP                  | NP |
|                                                                                                                              |       |                            |                                                                                    |                                                                    | 6                 | SP-SM                                                                                                                                            | NP  | NP                  | NP |
|                                                                                                                              |       |                            |                                                                                    |                                                                    | 8                 | CH                                                                                                                                               | 126 | 37                  | 39 |
| -11.0'                                                                                                                       |       |                            | No clay.                                                                           |                                                                    | 9                 | SC                                                                                                                                               | 40  | 24                  | 16 |
| -12.5'                                                                                                                       |       |                            | CH-Greenish grey fat clay, trace of fine to coarse gravel, fine sand & mica, damp. |                                                                    | 11                | SP                                                                                                                                               | NP  | NP                  | NP |
|                                                                                                                              |       |                            |                                                                                    |                                                                    | 14                | SP                                                                                                                                               | NP  | NP                  | NP |
| -15.5'                                                                                                                       |       |                            |                                                                                    |                                                                    | 16                | SW                                                                                                                                               | NP  | NP                  | NP |
| -17.0'                                                                                                                       |       |                            | SC-Greenish grey clayey fine to med. sand, trace of mica, wet.                     |                                                                    | 18                |                                                                                                                                                  |     |                     |    |
|                                                                                                                              |       |                            | SM-Greenish grey silty fine to med. sand, trace of mica, wet.                      |                                                                    |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".                                                   |     |                     |    |
|                                                                                                                              |       |                            | Continued on sht 2                                                                 |                                                                    |                   | NOTE: Soils visually field classified in accordance with the Unified                                                                             |     |                     |    |

| DRILLING LOG (Cont Sheet) |       |        | ELEVATION TO TOP OF HOLE                                                             |  | 13.0' MLW          |                         | Hole No. SH-138                                                                     |  |
|---------------------------|-------|--------|--------------------------------------------------------------------------------------|--|--------------------|-------------------------|-------------------------------------------------------------------------------------|--|
| PROJECT                   |       |        | INSTALLATION                                                                         |  | Savannah, Ga.      |                         | SHEET 2<br>OF 2 SHEETS                                                              |  |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                         |  | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if applicable) |  |
| -17.0'                    | 38'   | c      | d                                                                                    |  | e                  | JAR                     | f<br>BLOWS                                                                          |  |
|                           |       |        | SM-Greenish grey silty fine<br>to med. sand, trace of mica,<br>wet.                  |  |                    |                         |                                                                                     |  |
| -20.0'                    |       |        |                                                                                      |  |                    |                         |                                                                                     |  |
| -21.5'                    | 35    |        | Med. to coarse grained.                                                              |  |                    | 11                      |                                                                                     |  |
|                           |       |        | Fine to med. grained.                                                                |  |                    |                         |                                                                                     |  |
|                           |       |        |                                                                                      |  |                    |                         |                                                                                     |  |
|                           | 40    |        | Grey, some light brown & tan<br>streaks.                                             |  |                    | 12                      |                                                                                     |  |
| -29.0'                    |       |        | SP-Greyish brown poorly graded<br>med. to coarse sand, trace of<br>silt & mica, wet. |  |                    | 13                      |                                                                                     |  |
| -30.5'                    |       |        |                                                                                      |  |                    | 14                      |                                                                                     |  |
| -32.0'                    | 45    |        | Light brown, few grayish brown<br>streaks.                                           |  |                    |                         |                                                                                     |  |
| -33.5'                    |       |        | Very thin layer of decayed<br>wood at approx. 47.0'.                                 |  |                    |                         |                                                                                     |  |
| -35.0'                    |       |        | Few grey streaks, trace of<br>fine gravel.                                           |  |                    | 15                      |                                                                                     |  |
| -36.5'                    | 50    |        | No gravel.                                                                           |  |                    |                         |                                                                                     |  |
| -38.0'                    |       |        | Light greyish tan, fine to<br>med. grained, trace of fine<br>gravel.                 |  |                    | 16                      |                                                                                     |  |
| -39.5'                    |       |        | Greyish tan, med. to coarse<br>grained.                                              |  |                    |                         |                                                                                     |  |
| -41.0'                    | 55    |        | Coarse grained.                                                                      |  |                    | 17                      |                                                                                     |  |
| -44.0'                    |       |        | Some fine gravel.                                                                    |  |                    |                         |                                                                                     |  |
| -45.5'                    | 60    |        | Few thin grey silty layers.                                                          |  |                    | 18                      |                                                                                     |  |
| -50.0'                    | 65    |        | Bottom of Boring 63.0'                                                               |  |                    |                         |                                                                                     |  |

Hole No. SH-139

|                                                                                                                         |  |                                   |                                                                                                |                                                |
|-------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>DRILLING LOG</b>                                                                                                     |  | <b>DIVISION</b><br>South Atlantic | <b>INSTALLATION</b><br>Savannah, Ga.                                                           | <b>SHEET</b><br>1<br><b>OF</b> 7 <b>SHEETS</b> |
| <b>1. PROJECT</b><br>Savannah Harbor Widening                                                                           |  |                                   | <b>10. SIZE AND TYPE OF BIT</b> 3/8" splitspoon, 6" spiral                                     |                                                |
| <b>2. LOCATION (Coordinates or Station)</b><br>X=832938 Y=759697                                                        |  |                                   | <b>11. DATUM FOR ELEVATION SHOWN (TBM or MSL)</b><br>MLW                      auger & fishtail |                                                |
| <b>3. DRILLING AGENCY</b><br>Savannah District                                                                          |  |                                   | <b>12. MANUFACTURER'S DESIGNATION OF DRILL</b><br>Failing 314                                  |                                                |
| <b>4. HOLE NO. (As shown on drawing title and file number)</b><br>SH-139                                                |  |                                   | <b>13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN</b><br>DISTURBED 18      UNDISTURBED 1            |                                                |
| <b>5. NAME OF DRILLER</b><br>J. Butts                                                                                   |  |                                   | <b>14. TOTAL NUMBER CORE BOXES</b> 0                                                           |                                                |
| <b>6. DIRECTION OF HOLE</b><br><input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED      DEG. FROM VERT. |  |                                   | <b>15. ELEVATION GROUND WATER</b> See remarks                                                  |                                                |
| <b>7. THICKNESS OF OVERBURDEN</b> 61.5'                                                                                 |  |                                   | <b>16. DATE HOLE</b> STARTED      COMPLETED<br>16 March 1987 17 March 1987                     |                                                |
| <b>8. DEPTH DRILLED INTO ROCK</b> 0.0'                                                                                  |  |                                   | <b>17. ELEVATION TOP OF HOLE</b> 11.3'                                                         |                                                |
| <b>9. TOTAL DEPTH OF HOLE</b> 61.5'                                                                                     |  |                                   | <b>18. TOTAL CORE RECOVERY FOR BORING</b> N/A %                                                |                                                |
|                                                                                                                         |  |                                   | <b>19. SIGNATURE OF INSPECTOR</b><br>James Arthur, Geologist                                   |                                                |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                                  | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                | BLOWS |
|-----------|-------|--------|---------------------------------------------------------------------------------------------------------------|--------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 11.8'     | 0'    |        |                                                                                                               |                    | 1                       |                                                                                                                                                     | 18    |
| 10.3'     | 3.8'  |        | SM-Brown, silty, fine to med.<br>sand, some clayey layers<br>& fine to coarse gravel,<br>trace of mica, damp. |                    |                         | Water level 4.9'<br>depth to water<br>during drilling.                                                                                              | 15    |
| 7.3'      |       |        | Trace of fine gravel, no<br>clay.                                                                             |                    | 2                       | No 24 hour water<br>level taken. Back-<br>filled hole w/grout<br>after completion of<br>boring.                                                     | 13    |
| .3'       |       |        | Some tan streaks, trace of<br>fine to coarse gravel.                                                          |                    |                         |                                                                                                                                                     | 7     |
| 1.3'      |       |        | Brown, some grey streaks,<br>trace of clay, slight<br>aromatic solvent odor, wet.                             |                    |                         | Began using Revert<br>and 9 12.0'                                                                                                                   | 4     |
| -0.2'     |       |        | CH-Greyish brown fat clay,<br>trace of roots, mica & fine<br>to med. sand, damp.                              |                    |                         |                                                                                                                                                     | 2     |
| -2.7'     |       |        | Dark brownish grey to black,<br>no roots or sand.                                                             |                    |                         | Undisturbed sample<br>taken from 44.0' to<br>46.0'. Recovered<br>1.2'. Jar sample<br>taken from bottom of<br>5" Shelby tube from<br>45.0' to 45.2'. | 4     |
| -6.2'     |       |        | Dark greyish brown fat<br>clay.                                                                               |                    |                         |                                                                                                                                                     | 3     |
|           |       |        | SC-Grey clayey fine sand,<br>trace of mica, wet.                                                              |                    | 6                       |                                                                                                                                                     | 13    |
|           |       |        | SP-Tannish grey poorly<br>graded fine to med. sand,<br>trace of silt, mica & clay<br>in thin layers, wet.     |                    |                         | LAB CLASSIFICATION                                                                                                                                  |       |
|           |       |        | Greenish grey, fine grained.                                                                                  |                    |                         | No. Cl. S. LL. PL. PI                                                                                                                               |       |
|           |       |        | SC-Dark greenish grey, clayey,<br>fine to med. sand, trace of<br>mica, wet.                                   |                    |                         | 1. SW SM NP NP 14                                                                                                                                   | 25    |
|           |       |        | Some thick dark grey fat<br>clay layers & thin layers<br>of fine to med. sand.                                |                    |                         |                                                                                                                                                     | 28    |
|           |       |        | SP-Greenish grey, poorly<br>graded fine to med. sand,<br>trace of silt & mica, wet.                           |                    |                         |                                                                                                                                                     | 22    |

| DRILLING LOG (Cont Sheet) |       |        | ELEVATION TOP OF HOLE                                                                                  |                    | 11.8' MLW               |                                                                                      | Hole No. |         | SH-139 |             |    |
|---------------------------|-------|--------|--------------------------------------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|----------|---------|--------|-------------|----|
| PROJECT                   |       |        |                                                                                                        | INSTALLATION       |                         |                                                                                      |          | SHEET 2 |        | OF 2 SHEETS |    |
| Savannah Harbor Widening  |       |        |                                                                                                        | Savannah, Ga.      |                         |                                                                                      |          |         |        |             |    |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |          | BLOWS   |        |             |    |
| a                         | 30'   | c      | d                                                                                                      | e                  | JAR                     | f                                                                                    | g        | h       |        |             |    |
| -21.2'                    |       |        | SP-Tannish grey to green,<br>poorly graded fine sand,<br>trace of silt & mica, wet.                    |                    |                         |                                                                                      |          |         |        |             | 14 |
| -22.7'                    |       |        | Greyish tan, few thin grey<br>streaks.                                                                 |                    | 10                      |                                                                                      |          |         |        |             | 15 |
| -25.7'                    | 35    |        | SM-Greenish grey silty fine<br>to med. sand, trace of mica,<br>wet.                                    |                    | 11                      |                                                                                      |          |         |        |             | 34 |
| -27.2'                    |       |        | SC-Light greyish brown,<br>clayey fine sand, some fine<br>gravel, wet.                                 |                    | 12                      |                                                                                      |          |         |        |             | 22 |
| -28.7'                    | 40    |        | SM-Dark brown silty fine<br>sand, trace of wood, clay &<br>mica, wet.                                  |                    | 13                      |                                                                                      |          |         |        |             | 17 |
| -30.2'                    |       |        | Brown, some dark brown streaks.                                                                        |                    | 14                      |                                                                                      |          |         |        |             | 7  |
| -31.7'                    | 45    |        | CH-Greenish grey fat clay,<br>some fine sand, trace of<br>mica, damp.                                  |                    | 15                      |                                                                                      |          |         |        |             | 3  |
| -34.7'                    |       |        | Trace of fine sand.                                                                                    |                    |                         |                                                                                      |          |         |        |             | 21 |
| -37.7'                    | 50    |        | SC-Greenish grey clayey fine<br>to med. sand, trace of mica,<br>damp.                                  |                    | 16                      |                                                                                      |          |         |        |             | 5  |
| -42.2'                    |       |        | SM-Greenish grey silty fine<br>sand, trace of clay & mica,<br>wet.                                     |                    | 17                      |                                                                                      |          |         |        |             | 0  |
| -43.7'                    | 55    |        | SP-Tannish grey poorly<br>graded, med. to coarse sand,<br>trace of silt, wet.                          |                    |                         |                                                                                      |          |         |        |             | 0  |
| -45.7'                    |       |        | Trace of fine gravel.                                                                                  |                    |                         |                                                                                      |          |         |        |             | 10 |
| -48.2'                    | 60    |        | T-n, coarse grained, some<br>fine gravel.                                                              |                    | 18                      |                                                                                      |          |         |        |             | 10 |
| -49.7'                    |       |        | Layer of greyish green fat<br>clay at approx. 61.4' -<br>61.5'.                                        |                    |                         |                                                                                      |          |         |        |             | 19 |
|                           |       |        | Bottom of Boring @ 61.5'                                                                               |                    |                         |                                                                                      |          |         |        |             | 26 |
|                           |       |        | NOTE: Soils visually field classified<br>in accordance with the Unified Soil<br>Classification System. |                    |                         |                                                                                      |          |         |        |             | 29 |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             | 35 |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             | 89 |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             | 55 |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             | 36 |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             | 35 |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
|                           |       |        |                                                                                                        |                    |                         |                                                                                      |          |         |        |             |    |
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Hole No. SH-141

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                    | INSTALLATION<br>Savannah, Ga.                                                       |                                | SHEET<br>OF 3 SHEETS                                                                 |                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            |                                                                                                    | 10. SIZE AND TYPE OF BIT<br>1 3/8" splitspoon, 6" spiral                            |                                |                                                                                      |                                                                                                                                                                                                                               |
| 2. LOCATION (Coordinates or Station)<br>X=834110 Y=759335                                                                    |       |                            |                                                                                                    | 11. DATUM FOR ELEVATION SHOWN (FROM or MSL)<br>MLW auger & fishtail                 |                                |                                                                                      |                                                                                                                                                                                                                               |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                    | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                              |                                |                                                                                      |                                                                                                                                                                                                                               |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-141                                                            |       |                            |                                                                                                    | 13. TOTAL NO. OF OVER-<br>DISTURBED<br>C" DEEP SAMPL. S TAKEN: 10 UNDISTURBED       |                                |                                                                                      |                                                                                                                                                                                                                               |
| 5. NAME OF DRILLER<br>J. Butts                                                                                               |       |                            |                                                                                                    | 14. TOTAL NUMBER CORE BOXES -                                                       |                                |                                                                                      |                                                                                                                                                                                                                               |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                    | 15. ELEVATION GROUND WATER -                                                        |                                |                                                                                      |                                                                                                                                                                                                                               |
| 7. THICKNESS OF OVERBURDEN 61.5'                                                                                             |       |                            |                                                                                                    | 16. DATE HOLE STARTED 10 Mar 1987 COMPLETED 11 Mar 1987                             |                                |                                                                                      |                                                                                                                                                                                                                               |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                    | 17. ELEVATION TOP OF HOLE +11.8' MLW                                                |                                |                                                                                      |                                                                                                                                                                                                                               |
| 9. TOTAL DEPTH OF HOLE 61.5' (El. -49.7')                                                                                    |       |                            |                                                                                                    | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                            |                                |                                                                                      |                                                                                                                                                                                                                               |
|                                                                                                                              |       |                            |                                                                                                    | 19. SIGNATURE OF INSPECTOR <i>Toni F. Nicholson</i><br>Toni F. Nicholson, Geologist |                                |                                                                                      |                                                                                                                                                                                                                               |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Described)                                                         | CORE<br>RECOV-<br>ERY                                                               | BOX OR<br>SAMPLE<br>NO.<br>BAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                                                                                                                                                                                                                               |
| 11.8'                                                                                                                        | 0'    | c                          |                                                                                                    |                                                                                     |                                |                                                                                      |                                                                                                                                                                                                                               |
| 10.3'                                                                                                                        |       |                            | SC-Brown, fine to med. w/ fine gravel.                                                             |                                                                                     | 1                              |                                                                                      | Water level during drilling 1.8'. 42                                                                                                                                                                                          |
|                                                                                                                              |       |                            | SM-Tan, fine to med.                                                                               |                                                                                     | 2                              |                                                                                      | 20                                                                                                                                                                                                                            |
| 7.3'                                                                                                                         |       |                            | Greenish grey, glauconitic, fine, w/ 1" MH layers & wood fragments.                                |                                                                                     | 3                              |                                                                                      | 24 hour water level reading 1.6'. 5                                                                                                                                                                                           |
| 5.8'                                                                                                                         |       |                            | CH-Greenish grey, w/ fine to med. SM layers.                                                       |                                                                                     | 4                              |                                                                                      | Began using Revert drilling fluid at 7.5'. 1                                                                                                                                                                                  |
|                                                                                                                              |       |                            | SM-Greyish green, fine, w/ CH layers. Glauconitic, slightly micaceous. 6" CH layer @ 8.5' to 9.0'. |                                                                                     | 5                              |                                                                                      | NOTE: Encountered concrete about 6" below ground surface 4', 5', & 7' downstream of boring while locating drilling site for taking SH-141 undisturbed. Final location for undisturbed was 5' upstream from original boring. 2 |
| 2.8'                                                                                                                         |       |                            | CH-Greenish grey, 6" very fine to fine SM layer at 11.5'.                                          |                                                                                     | 6                              |                                                                                      | 3                                                                                                                                                                                                                             |
|                                                                                                                              |       |                            | With minor SM layers.                                                                              |                                                                                     | 7                              |                                                                                      | 8                                                                                                                                                                                                                             |
|                                                                                                                              |       |                            | SM-Greenish grey, fine, glauconitic, slightly micaceous. With minor CH layers.                     |                                                                                     | 8                              |                                                                                      | 5                                                                                                                                                                                                                             |
| -2.7'                                                                                                                        |       |                            | Light greenish grey, very fine to fine.                                                            |                                                                                     | 9                              |                                                                                      | 9                                                                                                                                                                                                                             |
|                                                                                                                              |       |                            | Greenish grey, fine to med. w/ CH layers.                                                          |                                                                                     | 10                             |                                                                                      | NOTE: Large amounts of lumber lying on top of ground near boring. 21                                                                                                                                                          |
|                                                                                                                              |       |                            | Fine, very minor CH layers.                                                                        |                                                                                     |                                |                                                                                      | 29                                                                                                                                                                                                                            |
|                                                                                                                              |       |                            |                                                                                                    |                                                                                     |                                |                                                                                      | LAB CLASSIFICATION 27                                                                                                                                                                                                         |
|                                                                                                                              |       |                            |                                                                                                    |                                                                                     |                                |                                                                                      | No. Class LL PL PI 15                                                                                                                                                                                                         |
|                                                                                                                              |       |                            |                                                                                                    |                                                                                     |                                |                                                                                      | 91 122 51 71 24                                                                                                                                                                                                               |
|                                                                                                                              |       |                            |                                                                                                    |                                                                                     |                                |                                                                                      | 23                                                                                                                                                                                                                            |
|                                                                                                                              |       |                            | Continued on sht 2                                                                                 |                                                                                     |                                |                                                                                      | BLOWS PER FOOT:                                                                                                                                                                                                               |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.   |                                                                                     |                                |                                                                                      | Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling                                                                                                                                                       |

| DRILLING LOG (Cont Sheet) |  |  | ELEVATION TOP OF HOLE    |  | 11.8' MLW |              | Hole No. |  | SH-141                                     |  |  |                 |  |  |                   |  |  |                                                                             |  |  |       |  |  |
|---------------------------|--|--|--------------------------|--|-----------|--------------|----------|--|--------------------------------------------|--|--|-----------------|--|--|-------------------|--|--|-----------------------------------------------------------------------------|--|--|-------|--|--|
| PROJECT                   |  |  | Savannah Harbor Widening |  |           | INSTALLATION |          |  | Savannah, Ga.                              |  |  |                 |  |  |                   |  |  |                                                                             |  |  |       |  |  |
| ELEVATION                 |  |  | DEPTH                    |  |           | LOG          |          |  | CLASSIFICATION OF MATERIALS (Description)  |  |  | % CORE RECOVERY |  |  | BOX OR SAMPLE NO. |  |  | REMARKS (Drill time, water loss, depth of weathering, etc., if significant) |  |  | BLOWS |  |  |
| a                         |  |  | b                        |  |           | c            |          |  | d                                          |  |  | e               |  |  | f                 |  |  | g                                                                           |  |  | h     |  |  |
|                           |  |  |                          |  |           |              |          |  | SM-Continued, as above.                    |  |  |                 |  |  |                   |  |  | NOTE: 31.5'-33.0' No drive taken, drifter                                   |  |  | 28    |  |  |
|                           |  |  |                          |  |           |              |          |  | Fine to med. w/ several CH layers.         |  |  |                 |  |  | 11                |  |  | accidentally cleaned out to 33.0' after                                     |  |  | NA    |  |  |
|                           |  |  |                          |  |           |              |          |  | Wood from 35.0' to 35.5'                   |  |  |                 |  |  |                   |  |  | taking drive from                                                           |  |  | 12    |  |  |
|                           |  |  |                          |  |           |              |          |  |                                            |  |  |                 |  |  |                   |  |  | 30.0' to 31.5'.                                                             |  |  | 15    |  |  |
|                           |  |  |                          |  |           |              |          |  | Fine, w/ brown clayey, organic zones       |  |  |                 |  |  | 12                |  |  | 36.0' to 37.5' No recovery.                                                 |  |  | 11    |  |  |
|                           |  |  |                          |  |           |              |          |  |                                            |  |  |                 |  |  |                   |  |  |                                                                             |  |  | 21    |  |  |
|                           |  |  |                          |  |           |              |          |  | Fine to med., w/ wood fragments.           |  |  |                 |  |  |                   |  |  |                                                                             |  |  | 29    |  |  |
|                           |  |  |                          |  |           |              |          |  | Without wood fragments.                    |  |  |                 |  |  | 13                |  |  |                                                                             |  |  | 19    |  |  |
|                           |  |  |                          |  |           |              |          |  | Without clayey, organic zones.             |  |  |                 |  |  |                   |  |  |                                                                             |  |  | 27    |  |  |
|                           |  |  |                          |  |           |              |          |  | Medium grained.                            |  |  |                 |  |  | 14                |  |  |                                                                             |  |  | 17    |  |  |
|                           |  |  |                          |  |           |              |          |  |                                            |  |  |                 |  |  |                   |  |  |                                                                             |  |  | 14    |  |  |
|                           |  |  |                          |  |           |              |          |  | Fine to med. w/ minor fine gravel.         |  |  |                 |  |  | 15                |  |  |                                                                             |  |  | 19    |  |  |
| -40.7'                    |  |  |                          |  |           |              |          |  | CH-Brown, w/ minor organics & rootlets.    |  |  |                 |  |  | 16A               |  |  |                                                                             |  |  | 9     |  |  |
| -41.7'                    |  |  |                          |  |           |              |          |  |                                            |  |  |                 |  |  | 16B               |  |  |                                                                             |  |  | 30    |  |  |
|                           |  |  |                          |  |           |              |          |  | SP-Tannish grey, med., sub-rounded.        |  |  |                 |  |  |                   |  |  |                                                                             |  |  | 30    |  |  |
|                           |  |  |                          |  |           |              |          |  | Fine to med. w/ 1/2" layer brown CH.       |  |  |                 |  |  | 17                |  |  |                                                                             |  |  | 37    |  |  |
| -46.7'                    |  |  |                          |  |           |              |          |  | Silty                                      |  |  |                 |  |  | 18                |  |  |                                                                             |  |  | 41    |  |  |
|                           |  |  |                          |  |           |              |          |  | SM-Light tan, fine, w/ some coarse grains. |  |  |                 |  |  |                   |  |  |                                                                             |  |  | 50    |  |  |
| -48.7'                    |  |  |                          |  |           |              |          |  | Bottom of Boring 61.5'                     |  |  |                 |  |  |                   |  |  |                                                                             |  |  |       |  |  |

Hole No. SH-141

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah, Ga.                                                                          | SHEET 3<br>OF 3 SHEETS  |                         |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Wifening                                                                                       |       |                            | 10. SIZE AND TYPE OF BIT 6" Fishtail                                                                   |                         |                         |                                                                                      |
| 2. LOCATION (Coordinates or Station)<br>X=834110 Y=759335                                                                    |       |                            | 11. DATUM FOR ELEVATION SHOWN (FDM or MSL)<br>MLW                                                      |                         |                         |                                                                                      |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                                 |                         |                         |                                                                                      |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-141A                                                           |       |                            | 13. TOTAL NO. OF OVER-<br>"INDEN SAMPLES TAKEN                                                         |                         | DISTURBED<br>1          |                                                                                      |
|                                                                                                                              |       |                            | UNDISTURBED<br>1                                                                                       |                         |                         |                                                                                      |
| 5. NAME OF DRILLER<br>J. Butts                                                                                               |       |                            | 14. TOTAL NUMBER CORE BOXES<br>-                                                                       |                         |                         |                                                                                      |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DES. FROM VERT. |       |                            | 15. ELEVATION GROUND WATER<br>-                                                                        |                         |                         |                                                                                      |
| 7. THICKNESS OF OVERBURDEN<br>14.0'                                                                                          |       |                            | 16. DATE HOLE<br>STARTED<br>12 Mar 1987                                                                |                         |                         |                                                                                      |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            | COMPLETED<br>12 Mar 1987                                                                               |                         |                         |                                                                                      |
| 9. TOTAL DEPTH OF HOLE<br>14.0'                                                                                              |       |                            | 17. ELEVATION TOP OF HOLE<br>11.8' MLW                                                                 |                         |                         |                                                                                      |
|                                                                                                                              |       |                            | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                                                            |                         |                         |                                                                                      |
|                                                                                                                              |       |                            | 19. SIGNATURE OF INSPECTOR<br>Toni F. Nicholson, Geologist                                             |                         |                         |                                                                                      |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| 11.8'                                                                                                                        | 0'    |                            |                                                                                                        |                         |                         |                                                                                      |
|                                                                                                                              | 5'    |                            | Fishtailed 0.0'-12.0'                                                                                  |                         |                         | Boring located approx.<br>5' upstream from<br>original SH-141<br>boring.             |
|                                                                                                                              | 10'   |                            |                                                                                                        |                         |                         | NOTE: Jar sample taken<br>from undisturbed<br>sample from 13.9'<br>to 14.0'.         |
| -0.2'                                                                                                                        |       |                            | CH-Greyish green, w/SM<br>stringers.                                                                   |                         | UD-1                    | LAB CLASSIFICATION<br>No. Class LL PL PI<br>UD-1 MH 95 45 50                         |
| -2.2'                                                                                                                        |       |                            |                                                                                                        |                         |                         | UD-1-1                                                                               |
|                                                                                                                              | 15'   |                            | Bottom of Boring 14.0'                                                                                 |                         |                         |                                                                                      |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified<br>in accordance with the Unified Soil<br>Classification System. |                         |                         |                                                                                      |



Hole No. SH-142

|                                                                                                                                     |  |                                   |                                                                                |                               |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|--------------------------------------------------------------------------------|-------------------------------|
| <b>DRILLING LOG</b>                                                                                                                 |  | <b>DIVISION</b><br>South Atlantic | <b>INSTALLATION</b><br>Savannah, Ga.                                           | <b>SHEET</b><br>1 OF 2 SHEETS |
| <b>1. PROJECT</b><br>Savannah Harbor Widening                                                                                       |  |                                   | <b>10. SIZE AND TYPE OF BIT</b><br>3/8" splitspoon, 6" spiral                  |                               |
| <b>2. LOCATION (Coordinates or Station)</b><br>X=834910 Y=759063                                                                    |  |                                   | <b>11. DATUM FOR ELEVATION SHOWN (TBM or MSL)</b><br>MHW<br>auger & fishtail   |                               |
| <b>3. DRILLING AGENCY</b><br>Savannah District                                                                                      |  |                                   | <b>12. MANUFACTURER'S DESIGNATION OF DRILL</b><br>Failing 314                  |                               |
| <b>4. HOLE NO. (As shown on drawing title and file number)</b><br>SH-142                                                            |  |                                   | <b>13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN</b><br>DISTURBED 10 UNDISTURBED 0 |                               |
| <b>5. NAME OF DRILLER</b><br>A. Lucas                                                                                               |  |                                   | <b>14. TOTAL NUMBER CORE BOXES</b><br>0                                        |                               |
| <b>6. DIRECTION OF HOLE</b><br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                                   | <b>15. ELEVATION GROUND WATER</b><br>See Remarks                               |                               |
| <b>7. THICKNESS OF OVERBURDEN</b><br>63.0'                                                                                          |  |                                   | <b>16. DATE HOLE</b><br>STARTED 27 Mar 1987 COMPLETED 27 Mar 1987              |                               |
| <b>8. DEPTH DRILLED INTO ROCK</b><br>0.0'                                                                                           |  |                                   | <b>17. ELEVATION TOP OF HOLE</b><br>13.3'                                      |                               |
| <b>9. TOTAL DEPTH OF HOLE</b><br>63.0'                                                                                              |  |                                   | <b>18. TOTAL CORE RECOVERY FOR BORING</b><br>N/A %                             |                               |
|                                                                                                                                     |  |                                   | <b>19. SIGNATURE OF INSPECTOR</b><br>James Arthur, Geologist                   |                               |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                          | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)              |
|-----------|-------|--------|-------------------------------------------------------------------------------------------------------|--------------------|-------------------------|---------------------------------------------------------------------------------------------------|
| 13.6'     | 0     | c      |                                                                                                       |                    | 1                       |                                                                                                   |
| 11.8'     |       |        | SM-Light brown & grey silty<br>fine to med. sand, some roots,<br>damp.                                |                    |                         |                                                                                                   |
| 10.3'     |       |        | Trace of roots.                                                                                       |                    | 2                       | Water level 6.0'<br>depth to water<br>during drilling.                                            |
| 8.8'      | 5     |        | SP-Light brown & tan poorly<br>graded fine to med. sand, trace<br>of silt, damp.                      |                    | 3                       |                                                                                                   |
| 7.3'      |       |        | SM-Light brown silty fine to<br>med. sand, some tan streaks,<br>trace of clay, moist.                 |                    | 4                       | No 24 hour water<br>level reading taken.<br>Grouted hole after<br>completion of<br>boring.        |
| 5.8'      | 10    |        | Wet, see remarks.                                                                                     |                    |                         |                                                                                                   |
| 4.3'      |       |        | Brownish grey.                                                                                        |                    |                         |                                                                                                   |
| 2.8'      |       |        | Trace of roots & mica.                                                                                |                    | 5                       | 6.0' to 7.5' - No split-<br>spoon recovery.<br>Classification<br>determined from auger<br>sample. |
| 1.3'      |       |        | No roots.                                                                                             |                    |                         |                                                                                                   |
| -0.2'     | 15    |        | SC-Grey clayey fine to med.<br>sand, some silty layers, trace<br>of wood & mica, wet.                 |                    | 6                       | Began using Revert<br>drilling mud at<br>9.0'.                                                    |
| -3.2'     |       |        | Fine grained, some thick grey<br>fat clay layers, no wood.                                            |                    | 7                       |                                                                                                   |
| -4.7'     |       |        | SM-Grey silty fine sand, some<br>dark grey streaks, trace of<br>mica & clay, wet.                     |                    | 8                       | LAB CLASSIFICATION                                                                                |
| -6.2'     | 20    |        |                                                                                                       |                    | 9                       | No. Class LL PL PI                                                                                |
| -7.7'     |       |        | SC-Grey & greyish brown clayey<br>fine sand, some thick layers of<br>silt & clay, trace of mica, wet. |                    | 10                      | 5 SC 35 23 12                                                                                     |
|           |       |        |                                                                                                       |                    | 7                       | SM 32 26 6                                                                                        |
|           |       |        |                                                                                                       |                    | 8                       | SM - - -                                                                                          |
|           |       |        |                                                                                                       |                    | 9                       | CH 112 40 72                                                                                      |
| -10.7'    | 25    |        | SM-Tannish grey silty fine<br>sand, trace of clay in thin layers<br>& mica, wet.                      |                    | 10                      | SC 43 23 20                                                                                       |
| -12.2'    |       |        |                                                                                                       |                    | 13                      | SW-SM NP NP NP                                                                                    |
| -13.7'    |       |        | CH-Grey fat clay, some fine to med.<br>sand in many thin to very thin<br>layers, trace of mica, damp. |                    | 16                      | SP NP NP NP                                                                                       |
| -15.2'    |       |        |                                                                                                       |                    | 11                      |                                                                                                   |
| -16.7'    | 30    |        | SC-Grey clayey med. sand,<br>some thick layers of sand,<br>trace of mica, wet.                        |                    |                         |                                                                                                   |
|           |       |        | Fine to med. grained.                                                                                 |                    |                         |                                                                                                   |
|           |       |        | SM-Grey silty fine sand, trace<br>of mica & clay in thin layers                                       |                    |                         |                                                                                                   |

**BLOWS PER FOOT:**  
Number required to  
drive 1 3/8" ID split-  
spoon w/140 lb. hammer  
falling 30".

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE |                                                                                          | Hole No.           |                        |                                                                                      |
|-------------------------------------|-------|-----------------------|------------------------------------------------------------------------------------------|--------------------|------------------------|--------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |       | 13.3' MLW             |                                                                                          | SH-142             |                        |                                                                                      |
| INSTALLATION<br>Savannah, Ga.       |       | SHEET 2               |                                                                                          | SHEETS             |                        |                                                                                      |
| ELEVATION                           | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE<br>RECOVERY | BOX OR<br>AMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -16.7'                              | 30'   | c                     | d                                                                                        | e                  | 14R                    | f<br>Blows                                                                           |
| -18.2'                              |       |                       | SM-Grey silty fine sand, trace<br>of mica & clay in several<br>thin clayey layers.       |                    | 12                     | 36                                                                                   |
| -19.7'                              |       |                       | Greenish grey, no clay.                                                                  |                    |                        | 35                                                                                   |
| -21.2'                              | 35    |                       | Tannish grey, fine to med. grain-<br>ed, few dark grey streaks, trace<br>of clay & mica. |                    |                        | 19                                                                                   |
| -22.7'                              |       |                       | No clay.                                                                                 |                    | 13                     | 28                                                                                   |
| -24.2'                              |       |                       | Trace of clay in thin layers.                                                            |                    |                        | 32                                                                                   |
|                                     | 40    |                       | No clay.                                                                                 |                    |                        | 35                                                                                   |
| -28.7'                              |       |                       | Greenish grey, fine to med.<br>sand, trace of clay & mica.                               |                    | 14                     | 36                                                                                   |
| -30.2'                              |       |                       | Tannish grey, fine grained,<br>no clay.                                                  |                    |                        | 39                                                                                   |
| -31.7'                              | 45    |                       | Greenish grey.                                                                           |                    | 15                     | 38                                                                                   |
|                                     |       |                       | Fine to med. grained, piece<br>of wood at 50.8' to 51.0'.                                |                    |                        | 43                                                                                   |
| -36.2'                              | 50    |                       | Several thin layers of wood.                                                             |                    |                        | 22                                                                                   |
| -37.7'                              |       |                       | Greyish tan, trace of fine<br>gravel, no wood.                                           |                    | 16                     | 44                                                                                   |
|                                     |       |                       | Fine grained.                                                                            |                    |                        | 37                                                                                   |
| -42.2'                              | 55    |                       | Grey & tan, med. grained,<br>some fine gravel.                                           |                    | 17                     | 40                                                                                   |
| -45.2'                              |       |                       |                                                                                          |                    |                        | 24                                                                                   |
| -46.7'                              | 60    |                       |                                                                                          |                    | 18                     | 36                                                                                   |
|                                     |       |                       |                                                                                          |                    |                        | 22                                                                                   |
| -49.7'                              |       |                       |                                                                                          |                    | 19                     | 23                                                                                   |
|                                     |       |                       | Bottom of Boring @ 63.0'                                                                 |                    |                        | 33                                                                                   |

Hole No. SH-143

|                                                                                                                                     |  |                                                                                                          |                                      |                               |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------|
| <b>DRILLING LOG</b>                                                                                                                 |  | <b>DIVISION</b><br>South Atlantic                                                                        | <b>INSTALLATION</b><br>Savannah, Ga. | <b>SHEET</b><br>1 OF 2 SHEETS |
| <b>1. PROJECT</b><br>Savannah Harbor Widening                                                                                       |  | <b>10. SIZE AND TYPE OF BIT</b> 1 3/8" splitspoon                                                        |                                      |                               |
| <b>2. LOCATION (Coordinates or Station)</b><br>X=835417 Y=758905                                                                    |  | <b>11. DATUM FOR ELEVATION - ROWN (BSM or MSL)</b><br>MLW                                                |                                      |                               |
| <b>3. DRILLING AGENCY</b><br>Savannah District                                                                                      |  | <b>12. MANUFACTURER'S DESIGNATION OF DRILL</b><br>CME 45                                                 |                                      |                               |
| <b>4. HOLE NO. (As shown on drawing title and file number)</b><br>SH-143                                                            |  | <b>13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN</b><br>DISTURBED 18 UNDISTURBED -                           |                                      |                               |
| <b>5. NAME OF DRILLER</b><br>J. Butts                                                                                               |  | <b>14. TOTAL NUMBER CORE BOXES</b> -                                                                     |                                      |                               |
| <b>6. DIRECTION OF HOLE</b><br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | <b>15. ELEVATION GROUND WATER</b> -                                                                      |                                      |                               |
| <b>7. THICKNESS OF OVERBURDEN</b> 64.5'                                                                                             |  | <b>16. DATE HOLE</b> STARTED 2 Mar 1987 COMPLETED 3 Mar 1987                                             |                                      |                               |
| <b>8. DEPTH DRILLED INTO ROCK</b> 0.0'                                                                                              |  | <b>17. ELEVATION TOP OF HOLE</b> +13.8'                                                                  |                                      |                               |
| <b>9. TOTAL DEPTH OF HOLE</b> 64.5'                                                                                                 |  | <b>18. TOTAL CORE RECOVERY FOR BORING</b> N/A %                                                          |                                      |                               |
|                                                                                                                                     |  | <b>19. SIGNATURE OF INSPECTOR</b> Toni F. Nicholson<br>Toni F. Nicholson<br>Toni F. Nicholson, Geologist |                                      |                               |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)               | BLOWS |
|-----------|-------|--------|--------------------------------------------------------------------------------------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------|-------|
| 13.8'     | 0.6   |        |                                                                                                  |                 |                   |                                                                                                 |       |
|           |       |        | CL-Brown, w/rootlets & tan SP layers.                                                            |                 | 1                 | Water level during drilling 5.4'                                                                | 5     |
| 10.8'     |       |        | SP-Tan, fine to med, w/clayey zones, micaceous.                                                  |                 | 2                 | 24 hour water level reading 5.2'                                                                | 8     |
|           | 5     |        | Wet.                                                                                             |                 |                   |                                                                                                 | 4     |
| 6.3'      |       |        | SM-Dark tan, fine to med, micaceous.                                                             |                 | 3                 | Mixed Revert drilling mud at 9.0'.                                                              | 10    |
|           | 10    |        | Greenish grey, glauconitic, w/MH layers & wood fragments rotten wood 13.1'-13.5'.                |                 |                   | LAB CLASSIFICATION                                                                              | 6     |
|           |       |        |                                                                                                  |                 |                   | No. Class LL PL PI                                                                              | 3     |
| 0.3'      |       |        | CH-Greyish green. Rotten wood 14.7'-15.0'. Wood 15.5'-16.0'. SM layer 16.0'-16.2'.               |                 | 4                 | 5 CH 102 36 66                                                                                  | 8     |
|           | 15    |        |                                                                                                  |                 | 5                 | 8 SC-H 57 22 35                                                                                 | 7     |
|           |       |        |                                                                                                  |                 |                   | 10 SM NP NP NP                                                                                  | 7     |
| -2.7'     |       |        | SM-Greenish grey, fine, micaceous, w/1" wood fragment.                                           |                 |                   | 11 SP-SM NP NP NP                                                                               | 16    |
|           | 20    |        | Fine to med. grained.                                                                            |                 | 6                 | 14 SP-SM NP NP NP                                                                               | 21    |
|           |       |        |                                                                                                  |                 |                   | 17 SP-SM NP NP NP                                                                               | 19    |
|           | 25    |        | Fine grained, w/brown organics.                                                                  |                 | 7                 |                                                                                                 | 11    |
|           |       |        | MH-Greyish green, w/SM layers.                                                                   |                 |                   |                                                                                                 | 11    |
| -11.7'    |       |        | SM-Greenish grey, fine to med, glauconitic, micaceous w/MH layers.                               |                 |                   |                                                                                                 | 10    |
| -13.2'    |       |        |                                                                                                  |                 | 8                 |                                                                                                 | 11    |
|           | 30    |        |                                                                                                  |                 |                   |                                                                                                 | 9     |
|           |       |        |                                                                                                  |                 |                   |                                                                                                 | 13    |
|           |       |        |                                                                                                  |                 |                   |                                                                                                 | 13    |
|           |       |        | Continued on sht 2                                                                               |                 |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30". |       |
|           |       |        | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                 |                   |                                                                                                 |       |

Hole No. SH-144

| DRILLING LOG                                                                                                                                |  | DIVISION<br>South Atlantic |  | INSTALLATION<br>Savannah, Ga.                                                           |  | SITE NO.<br>SHEET 1 OF 2 SHEETS            |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|-----------------------------------------------------------------------------------------|--|--------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                                      |  |                            |  | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 6" spiral                                   |  |                                            |  |
| 2. LOCATION (Coordinates or Station)<br>X=836130 Y=758670                                                                                   |  |                            |  | 11. DAYUM FOR ELEVATION SHOWN (BSM or MSL)<br>MLW                      auger & fishtail |  |                                            |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                                     |  |                            |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 114                                  |  |                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)                      SH-144                                                         |  |                            |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                              |  | DISTURBED                      UNDISTURBED |  |
| 5. NAME OF DRILLER<br>J. Butler                                                                                                             |  |                            |  | 14. TOTAL NUMBER CORH WORKS                      11                                     |  |                                            |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED                      DEG. FROM VERT. |  |                            |  | 15. ELEVATION GROUND WATER                      26.1 (under log)                        |  |                                            |  |
| 7. THICKNESS OF OVERBURDEN                      58.5'                                                                                       |  |                            |  | 16. DATE HOLE                      24 Mar 1987                                          |  | COMPLETED                      26 Mar 1987 |  |
| 8. DEPTH DRILLED INTO ROCK                      0.0'                                                                                        |  |                            |  | 17. ELEVATION TOP OF HOLE                      8.5'                                     |  |                                            |  |
| 9. TOTAL DEPTH OF HOLE                      58.5'                                                                                           |  |                            |  | 18. TOTAL CORH RECOVERY FOR BORING                      N/A                             |  |                                            |  |
|                                                                                                                                             |  |                            |  | 19. SIGNATURE OF INSPECTOR                      J.E. James Arthur, Geologist            |  |                                            |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                       |
|-----------|-------|--------|------------------------------------------------------------------------------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| 8.5'      | 0'    |        |                                                                                          |                 |                   | BLOWS                                                                                                                   |
| 7.0'      | 1'    |        | CH-Brown fat clay, some fine sand & roots at 1.3', wet.                                  |                 | 1                 | Water level 1.3' depth to water during drilling.                                                                        |
| 5.5'      | 2'    |        |                                                                                          | 2               |                   |                                                                                                                         |
| 4.0'      | 3'    |        | SM-Grey silty fine to med. sand, large piece of wood, wet.                               |                 | 3                 | No 24 hour water level reading taken. Grouted hole after completion of boring. Began using Revert drilling mud at 6.0'. |
| 1.0'      | 4'    |        | Brown, trace of clay, no wood.                                                           |                 |                   |                                                                                                                         |
| -0.5'     | 5'    |        | No clay.                                                                                 |                 |                   |                                                                                                                         |
| -2.0'     | 6'    |        | Some wood & clay layer at 3.7'.                                                          |                 |                   |                                                                                                                         |
| -3.5'     | 7'    |        | CH-Greyish brown fat clay, some wood & trace of fine sand, wet. (See remarks)            |                 | 4                 | 9.0' to 10.5' - Higher blow count may be due to driving through wood.                                                   |
| -6.5'     | 10'   |        | No recovery, see remarks.                                                                |                 | 5                 |                                                                                                                         |
|           | 11'   |        | CH-Same as from 9.0' to 10.5'.                                                           |                 | 6                 | 10.5' to 12.0' - No splitspoon recovery. Probably wood blocking entry of soft clay.                                     |
| -9.5'     | 12'   |        | SC-Grey clayey fine to med. sand, some thick silty sand layers, trace of mica, wet.      |                 | 7                 | LAB CLASSIFICATION                                                                                                      |
| -11.0'    | 13'   |        | SM-Greenish grey silty fine to med. sand trace of mica & clayey sand in thin layers wet. |                 |                   | No. Class LL PL PI                                                                                                      |
| -14.0'    | 14'   |        |                                                                                          | 4               | MH 99 42 57       |                                                                                                                         |
| -15.5'    | 15'   |        | No clay.                                                                                 |                 | 6                 | SC-H 52 21 31                                                                                                           |
|           | 16'   |        |                                                                                          | 8               | CH 96 33 63       |                                                                                                                         |
| -18.5'    | 17'   |        | CH-Greenish grey fat clay, some sand in thin to very thin layers, trace of mica, wet.    |                 | 1                 | SP NP NP NP                                                                                                             |
| -21.5'    | 18'   |        | SP-Greyish tan poorly graded fine to med. sand, trace of silt & mica, wet.               |                 | 3                 | SP 28 23 5                                                                                                              |
|           | 19'   |        |                                                                                          |                 | 15                | SP NP NP NP                                                                                                             |
|           | 20'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 21'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 22'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 23'   |        | Trace of clay in several very thin layers.                                               |                 | 9                 |                                                                                                                         |
|           | 24'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 25'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 26'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 27'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 28'   |        | Continued on sheet 2                                                                     |                 | 10                |                                                                                                                         |
|           | 29'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 30'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 31'   |        |                                                                                          |                 |                   |                                                                                                                         |
|           | 32'   |        |                                                                                          |                 |                   |                                                                                                                         |

NO. 5: Soils visually field classified in accordance with the Unified Soil

| DRILLING LOG (Cont Sheet) |       |        | ELEVATION TOP OF HOLE                                                                                                  |  | 8.5' MLW                |                         | Hole No.                                                                             |        | SH-144 |  |
|---------------------------|-------|--------|------------------------------------------------------------------------------------------------------------------------|--|-------------------------|-------------------------|--------------------------------------------------------------------------------------|--------|--------|--|
| PROJECT                   |       |        | INSTALLATION                                                                                                           |  |                         | SHEET 2                 |                                                                                      | SHEETS |        |  |
| Savannah Harbor Widening  |       |        | Savannah, Ga.                                                                                                          |  |                         |                         |                                                                                      |        |        |  |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                                           |  | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |        |        |  |
|                           |       |        | Cont'd.                                                                                                                |  |                         | JAR                     | BLOWS                                                                                |        |        |  |
| -23.0'                    |       |        | SP-Greyish tan poorly graded<br>fine to med.sand,trace of<br>mica & wood in thin layer &<br>clay in very thin layers.  |  |                         |                         |                                                                                      |        |        |  |
| -26.0'                    |       |        | Tannish grey,med.to coarse<br>grained,trace of fine gravel,<br>no wood or clay.                                        |  |                         |                         |                                                                                      |        |        |  |
| -27.5'                    |       |        | Greyish tan,thin layer of wood,<br>no gravel.                                                                          |  |                         |                         |                                                                                      |        |        |  |
| -29.0'                    |       |        | Fine to med.grained,few grey<br>streaks.                                                                               |  |                         | 12                      |                                                                                      |        |        |  |
| -30.5'                    |       |        | SM-Tannish grey silty fine to<br>med.sand,few grey streaks,<br>trace of wood & mica,wet.                               |  |                         | 13                      |                                                                                      |        |        |  |
| -32.0'                    |       |        | Trace of clay in several thin<br>layers.                                                                               |  |                         | 14                      |                                                                                      |        |        |  |
| -33.5'                    |       |        | SC-Grey clayey fine to med.<br>sand,some thick clay layers &<br>thick layer of fine to med.<br>sand,trace of mica,wet. |  |                         | 15                      |                                                                                      |        |        |  |
| -35.0'                    |       |        | SP-Greyish tan poorly graded<br>fine to med.sand,few thin<br>grey streaks,trace of silt<br>& mica,wet.                 |  |                         | 16                      |                                                                                      |        |        |  |
| -36.5'                    |       |        | Thin layer of wood.                                                                                                    |  |                         |                         |                                                                                      |        |        |  |
| -39.5'                    |       |        | Tan,trace of fine gravel,<br>no wood.                                                                                  |  |                         |                         |                                                                                      |        |        |  |
| -42.5'                    |       |        | Med.grained,some fine gravel.                                                                                          |  |                         |                         |                                                                                      |        |        |  |
| -44.0'                    |       |        | Med.to coarse grained,trace<br>of fine gravel.                                                                         |  |                         | 17                      |                                                                                      |        |        |  |
| -47.0'                    |       |        | Fine to med.grained,no gravel.                                                                                         |  |                         |                         |                                                                                      |        |        |  |
| -50.0'                    |       |        | Some fine gravel.                                                                                                      |  |                         |                         |                                                                                      |        |        |  |
|                           |       |        | Bottom of Boring @ 58.5'                                                                                               |  |                         |                         |                                                                                      |        |        |  |

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic |                                                                                 | INSTALLATION<br>Savannah, Ga.                                                       |                                | Hole No. SH-145<br>SHEET 1<br>OF 2 SHEETS                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |              |                            |                                                                                 | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon                                          |                                |                                                                                                          |  |
| 2. LOCATION (Coordinates or Station)<br>X=836398 Y=758650                                                                    |              |                            |                                                                                 | 11. DATUM FOR ELEVATION SHOWN (FBN or MSL)<br>MLW                                   |                                |                                                                                                          |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            |                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 45                                   |                                |                                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-145                                                            |              |                            |                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                          |                                | DISTURBED<br>22                                                                                          |  |
| 5. NAME OF DRILLER<br>Wayne Justiss/Avery Yates                                                                              |              |                            |                                                                                 | 14. TOTAL NUMBER CORE BOXES                                                         |                                | UNDISTURBED<br>-                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                 | 15. ELEVATION GROUND WATER                                                          |                                | -                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 61.5'                                                                                             |              |                            |                                                                                 | 16. DATE HOLE                                                                       |                                | STARTED 11 Feb 1987 COMPLETED 24 Feb 1987                                                                |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                            |                                                                                 | 17. ELEVATION TOP OF HOLE +11.4' MLW                                                |                                |                                                                                                          |  |
| 9. TOTAL DEPTH OF HOLE 61.5' (El.-50.1')                                                                                     |              |                            |                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING %                                                |                                |                                                                                                          |  |
|                                                                                                                              |              |                            |                                                                                 | 19. SIGNATURE OF INSPECTOR <i>Toni F. Nicholson</i><br>Toni F. Nicholson, Geologist |                                |                                                                                                          |  |
| ELEVATION<br>11.4'                                                                                                           | DEPTH<br>61' | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                    | % CORE<br>RECOVER-<br>ERY                                                           | BOX OR<br>SAMPLE<br>NO.<br>LAB | REMARKS<br>(Drilling time, water loss, depth of<br>monitoring, etc., if significant)                     |  |
| 10.4'                                                                                                                        |              |                            | SM-Brown, fine to med. w/<br>grass roots.                                       |                                                                                     | 1A                             | Water level during<br>drilling 3.0'.                                                                     |  |
| 8.4'                                                                                                                         |              |                            | SP- Tan, fine to med.                                                           |                                                                                     | 2A                             | Water level 2.9'                                                                                         |  |
| 7.4'                                                                                                                         |              |                            | SC-Brown, fine to med., wet.                                                    |                                                                                     | 2B                             | 24 hours after<br>completion of boring.                                                                  |  |
| 5.4'                                                                                                                         |              |                            | SM-Green to grey, fine to<br>med., glauconitic, slightly<br>micaceous.          |                                                                                     | 3A                             | Began using Revert                                                                                       |  |
| 4.4'                                                                                                                         |              |                            | SI-Dark grey, fine to coarse<br>w/ large gravel.                                |                                                                                     | 3B                             | mud at 10.5'.                                                                                            |  |
| 3.8'                                                                                                                         |              |                            | CH-Dark grey.                                                                   |                                                                                     | 4                              |                                                                                                          |  |
| 0.9'                                                                                                                         |              |                            | SM-Dark grey, slightly clayey<br>fine to med., few coarse<br>grains and gravel. |                                                                                     |                                | No recovery 16.5' to<br>18.0', 19.5' to 21.0'                                                            |  |
| -2.1'                                                                                                                        |              |                            |                                                                                 |                                                                                     |                                | LAB CLASSIFICATION<br>No. Class LL PL PI                                                                 |  |
| -4.3'                                                                                                                        |              |                            | No Recovery (few pieces of<br>large gravel).                                    |                                                                                     | 5                              | 9A MH 115 47 6R                                                                                          |  |
|                                                                                                                              |              |                            | MH-Dark greyish brown.                                                          |                                                                                     | 6A                             | 3B MH - - -                                                                                              |  |
|                                                                                                                              |              |                            |                                                                                 |                                                                                     | 6B                             |                                                                                                          |  |
| -9.6'                                                                                                                        |              |                            | SM-Greenish grey, med., glau-<br>conitic, slightly micaceous.                   |                                                                                     | 7                              |                                                                                                          |  |
| -11.1'                                                                                                                       |              |                            | Fine to med. grained.                                                           |                                                                                     | 8                              |                                                                                                          |  |
|                                                                                                                              |              |                            | MH-Greenish grey, sandy zones.                                                  |                                                                                     |                                |                                                                                                          |  |
| -15.6'                                                                                                                       |              |                            | SM-Greenish grey, fine, w/<br>MH layers.                                        |                                                                                     | 9A                             |                                                                                                          |  |
| -16.1'                                                                                                                       |              |                            | Fine to med., 3" MH layer<br>@ 24.5'.                                           |                                                                                     | 9B                             |                                                                                                          |  |
|                                                                                                                              |              |                            | With 1/4" dia. root fragment.                                                   |                                                                                     |                                |                                                                                                          |  |
|                                                                                                                              |              |                            | MH-Green.                                                                       |                                                                                     |                                | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb. hammer falling<br>30". |  |
|                                                                                                                              |              |                            | SI-Greenish grey, fine to<br>med., micaceous, glauconitic.                      |                                                                                     |                                |                                                                                                          |  |

| DRILLING LOG (Cont Sheet)           |                | ELEVATION TOP OF HOLE         |                                                                 | Hole No. SH 145        |                                   |                                                                                                    |
|-------------------------------------|----------------|-------------------------------|-----------------------------------------------------------------|------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |                | INSTALLATION<br>Savannah, Ga. |                                                                 | SHEET 2<br>OF 2 SHEETS |                                   |                                                                                                    |
| ELEVATION<br>a                      | DEPTH<br>b, 0' | LEGEND<br>c                   | CLASSIFICATION OF MATERIALS<br>(Description)<br>d               | % CORE<br>RECOVER<br>e | BOX OR<br>SAMPLE<br>NO.<br>f, JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g          |
|                                     |                |                               | SM-Continued, as above.                                         |                        |                                   |                                                                                                    |
|                                     |                |                               | Dark greenish grey, med., w/<br>few coarse grains.              |                        | 10                                |                                                                                                    |
|                                     |                |                               |                                                                 |                        |                                   |                                                                                                    |
|                                     | 35             |                               | Greyish green, w/few organics.                                  |                        | 11                                | No recovery 45.0' to<br>46.5'.                                                                     |
|                                     |                |                               | Light greyish green, very<br>glauconitic, large mica<br>flakes. |                        |                                   |                                                                                                    |
|                                     | 40             |                               | Med. grayish green.                                             |                        | 12                                | NOTE: Boring moved<br>3' from original<br>location due to<br>fishtail and 10'<br>rod lost in hole. |
|                                     |                |                               | Subrounded-subangular quartz<br>grains.                         |                        |                                   |                                                                                                    |
|                                     | 45             |                               | Light greyish green, small<br>wood fragments.                   |                        | 13                                | Fishtailed down<br>to 51.0' after<br>relocating hole.                                              |
|                                     |                |                               | Light grey, fine to coarse,<br>few clayey zones, w/gravel.      |                        |                                   |                                                                                                    |
|                                     | 50             |                               | Light greenish grey, fine.                                      |                        | 14                                |                                                                                                    |
|                                     |                |                               | Light tan, fine to med.                                         |                        |                                   |                                                                                                    |
|                                     | 55             |                               | SP-Light tan, med., micaceous.                                  |                        |                                   |                                                                                                    |
|                                     |                |                               | SM-Light tan, fine to med.,<br>few organics.                    |                        | 15                                |                                                                                                    |
|                                     | -42.0'         |                               |                                                                 |                        | 16                                |                                                                                                    |
|                                     | -44.1'         |                               |                                                                 |                        | 17                                |                                                                                                    |
|                                     | 60             |                               | Bottom of Boring @ 61.5'                                        |                        |                                   |                                                                                                    |
|                                     | -50.1'         |                               |                                                                 |                        |                                   |                                                                                                    |
|                                     | 55             |                               |                                                                 |                        |                                   |                                                                                                    |



Hole No. 101-146

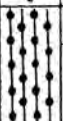
| DRILLING LOG                                                                                                      |       | DIVISION<br>South Atlantic |                                                                                                                  | INSTALLATION<br>Savannah, Ga.                              |                                | SHEET<br>OF 2 SHEETS                                                                  |      |
|-------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------|------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                            |       |                            |                                                                                                                  | 10. SIZE AND TYPE OF BIT 3/8" splitspoon                   |                                |                                                                                       |      |
| 2. LOCATION (Coordinates or Station)<br>X=836728 Y=758537                                                         |       |                            |                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL)<br>MLW          |                                |                                                                                       |      |
| 3. DRILLING AGENCY<br>Savannah District                                                                           |       |                            |                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 45          |                                |                                                                                       |      |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-146                                                 |       |                            |                                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN             |                                | DISTURBED 11 UNDISTURBED -                                                            |      |
| 5. NAME OF DRILLER<br>Wayne Smith                                                                                 |       |                            |                                                                                                                  | 14. TOTAL NUMBER CORE BOXES                                |                                |                                                                                       |      |
| 6. DIRECTION OF HOLE<br><input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                  | 15. ELEVATION GROUND WATER                                 |                                |                                                                                       |      |
| 7. THICKNESS OF OVERBURDEN 60.0'                                                                                  |       |                            |                                                                                                                  | 16. DATE HOLE                                              |                                | 18. DATE HOLE                                                                         |      |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                   |       |                            |                                                                                                                  | 3 Feb 1987                                                 |                                | 10 Feb 1987                                                                           |      |
| 9. TOTAL DEPTH OF HOLE 60.0' (EL.-49.7')                                                                          |       |                            |                                                                                                                  | 17. ELEVATION TOP OF HOLE 10.3' MLW                        |                                | 19. TOTAL CORE RECOVERY FOR BORING %                                                  |      |
|                                                                                                                   |       |                            |                                                                                                                  | 18. SIGNATURE OF INSPECTOR<br>Toni F. Nicholson, Geologist |                                |                                                                                       |      |
| ELEVATION                                                                                                         | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                     | % CORE<br>RECOV-<br>ERY                                    | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)  |      |
| 10.0'                                                                                                             | 0'    | c                          |                                                                                                                  |                                                            |                                |                                                                                       | BLWS |
|                                                                                                                   |       |                            | SP-Tan, med.-coarse grained,<br>w/minor fine gravel.                                                             |                                                            | 1                              |                                                                                       | 12   |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 23   |
|                                                                                                                   |       |                            | fine-coarse grained, w/8"<br>layer dark tan-grey SM<br>@ 2.0'.                                                   |                                                            | 2                              | Water level<br>4.5' depth to<br>water during<br>drilling.                             | 17   |
|                                                                                                                   |       |                            | Rddish-tan, wet.                                                                                                 |                                                            |                                |                                                                                       | 17   |
|                                                                                                                   |       |                            | Gradual change to grey color.                                                                                    |                                                            |                                |                                                                                       | 12   |
|                                                                                                                   |       |                            | Blue-grey, med. grained, very<br>wet.                                                                            |                                                            | 3                              | Water level<br>4.5' reading<br>made 24 hours<br>after completion<br>of boring.        | 4    |
| -1.7'                                                                                                             |       |                            | Tan, med. grained. Change to<br>fine-med., blue grey @ 10.0',<br>very wet, few coarse grains.                    |                                                            |                                |                                                                                       | 5    |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 3    |
| -4.7'                                                                                                             | 15'   |                            | MH-Grey-green, wood from<br>approx. 12.0' to 12.5'.                                                              |                                                            | 4                              | At 12.0' to 13.5'<br>drilled thru wood,<br>then MH w/spiral<br>auger.                 | 50/1 |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            | 5                              |                                                                                       | 3    |
|                                                                                                                   |       |                            | SM-Greenish grey, fine grained,<br>slightly micaceous, glauconitic<br>16.5'-17.2' slightly clayey<br>w organics. |                                                            | 6                              | No. 5-Poor sample                                                                     | WH   |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 17   |
|                                                                                                                   |       |                            | With minor pea gravel.                                                                                           |                                                            | 7                              | Began using Revert<br>drilling fluid at<br>16.5'.                                     | 14   |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 19   |
|                                                                                                                   |       |                            | 2" layer organics (leaves &<br>wood fragments) 24.5'-<br>24.7'. Few med. & coarse<br>grains.                     |                                                            | 8                              |                                                                                       | 24   |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 7    |
|                                                                                                                   |       |                            | Few wood fragments.                                                                                              |                                                            |                                |                                                                                       | 9    |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 10   |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 11   |
|                                                                                                                   |       |                            |                                                                                                                  |                                                            |                                |                                                                                       | 31   |
|                                                                                                                   |       |                            | Continued on sht 2                                                                                               |                                                            |                                | BLWS PER FOOT:                                                                        |      |
|                                                                                                                   |       |                            | NOTE: Soils visually field classified<br>in accordance with the Unified Soil<br>Classification System.           |                                                            |                                | Number required to drive<br>1 3/8" ID Splitspoon w/<br>140 lb. hammer falling<br>30". |      |



| DRILLING LOG (Cont Sheet)           |                   |             | ELEVATION TOP OF HOLE<br>+10.3' MLW                                                                     |                       | Hole No. SH-146                |                                                                                           |
|-------------------------------------|-------------------|-------------|---------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor Widening |                   |             | INSTALLATION<br>Savannah, Ga.                                                                           |                       | SHEET 2<br>OF 2 SHEETS         |                                                                                           |
| ELEVATION<br>a                      | DEPTH<br>30 to 0' | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                       | CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                     |                   |             | SM-Greenish grey, fine to med.<br>slightly micaceous, dark<br>green mineral, glauconite.                |                       | 9                              | 34                                                                                        |
|                                     |                   |             |                                                                                                         |                       |                                | 20                                                                                        |
|                                     |                   |             |                                                                                                         |                       |                                | 16                                                                                        |
|                                     | 35                |             | Med. grey.                                                                                              |                       | 10                             | 21                                                                                        |
|                                     |                   |             |                                                                                                         |                       |                                | 32                                                                                        |
|                                     |                   |             | Greenish grey                                                                                           |                       |                                | 38                                                                                        |
|                                     | 40                |             |                                                                                                         |                       | 11                             | 40                                                                                        |
|                                     |                   |             | Grey, w/ large mica flakes                                                                              |                       |                                | 35                                                                                        |
|                                     |                   |             | Light grey, subrounded, fine<br>to med. quartz, w/ very fine,<br>black grains, slightly mica-<br>ceous. |                       | 12                             | Began using<br>Zeogel mud mix at<br>43.5'.                                                |
|                                     | 45                |             |                                                                                                         |                       |                                | 43                                                                                        |
|                                     |                   |             |                                                                                                         |                       |                                | 42                                                                                        |
|                                     |                   |             |                                                                                                         |                       |                                | 35                                                                                        |
| -37.7'                              |                   |             |                                                                                                         |                       |                                | 43                                                                                        |
|                                     |                   |             | SP-Light tanish grey, med.,<br>subrounded.                                                              |                       | 13                             | 32                                                                                        |
|                                     | 50                |             | Med. grey, med to coarse<br>grained.                                                                    |                       |                                | 19                                                                                        |
|                                     |                   |             | Slightly silty, few organics,<br>slightly micaceous.                                                    |                       | 14                             | 24                                                                                        |
| -43.7'                              |                   |             |                                                                                                         |                       |                                | 42                                                                                        |
|                                     |                   |             | SM-Light grey, med., micaceous.                                                                         |                       | 15                             | 38                                                                                        |
|                                     | 55                |             | Light greenish grey, fine to<br>med., glauconitic.                                                      |                       |                                | 45                                                                                        |
|                                     |                   |             | Fine grained.                                                                                           |                       | 16                             | 53                                                                                        |
| -49.7'                              | 60                |             | Bottom of Boring @ 60.0'.                                                                               |                       |                                | 94                                                                                        |

Hole No. SH-147

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah, Ga.                                                        |                   | SHEET 1<br>OF 2 SHEETS         |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------|-------------------|--------------------------------|--------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Widening                                                                                       |       |                            | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 4" spiral                                |                   |                                |                                                                                      |
| 2. LOCATION (Coordinates or Station)<br>X=836960 Y=758417                                                                    |       |                            | 11. DAYUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW 6" auger & fishtail                |                   |                                |                                                                                      |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 45 (0.0'-12.0'), CME 55 (12.0'-58.5') |                   |                                |                                                                                      |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-147                                                            |       |                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 10 UNDISTURBED 1             |                   |                                |                                                                                      |
| 5. NAME OF DRILLER<br>J. Butt                                                                                                |       |                            | 14. TOTAL NUMBER CORE BOXES 11                                                       |                   |                                |                                                                                      |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            | 15. ELEVATION GROUND WATER See Remarks                                               |                   |                                |                                                                                      |
| 7. THICKNESS OF OVERBURDEN 58.5'                                                                                             |       |                            | 16. DATE HOLE STARTED 20 Feb 1987 COMPLETED 6 Mar 1987                               |                   |                                |                                                                                      |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            | 17. ELEVATION TOP OF HOLE 8.8' MLW                                                   |                   |                                |                                                                                      |
| 9. TOTAL DEPTH OF HOLE 58.5'                                                                                                 |       |                            | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                             |                   |                                |                                                                                      |
|                                                                                                                              |       |                            | 19. SIGNATURE OF INSPECTOR<br>F. Nicholson (0-12') J. Arthur (12-58.5')              |                   |                                |                                                                                      |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                         | SCORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| 8.8'                                                                                                                         | 0'    |                            |                                                                                      |                   |                                |                                                                                      |
| 5.8'                                                                                                                         | 5'    |                            | CH-Brown fat clay, trace of roots.                                                   |                   | 1                              | 0.0' to 1.5'-No                                                                      |
| 4.3'                                                                                                                         |       |                            | SC-Tannish grey clayey fine to coarse sand, wet.                                     |                   | 2                              | splitspoon recovery                                                                  |
| 2.8'                                                                                                                         |       |                            | Grey, trace of fine gravel.                                                          |                   |                                | Sample #1 taken from                                                                 |
| 1.3'                                                                                                                         |       |                            | SM-Grey silty fine to med. sand, trace of clay & roots, wet.                         |                   | 3                              | spiral auger.                                                                        |
| -1.7'                                                                                                                        | 10'   |                            | Greenish grey, trace of mica and organics.                                           |                   |                                | Water level 3.4'                                                                     |
| -3.2'                                                                                                                        |       |                            | Trace of fine gravel.                                                                |                   | 4                              | depth to water                                                                       |
|                                                                                                                              |       |                            | CH-Greyish brown fat clay, wet.                                                      |                   | 5                              | during Drilling.                                                                     |
|                                                                                                                              | 15'   |                            | Trace of micaceous, silty fine sand in thin layers, damp.                            |                   |                                | No 24 hour water                                                                     |
| -4.2'                                                                                                                        |       |                            | Layer of silty fine to med. sand from approx. 20.7' to 21.0'.                        |                   |                                | level reading taken.                                                                 |
| -10.7'                                                                                                                       | 20'   |                            | Trace of mic., silty fine sand in thin layers.                                       |                   | 6                              | Used Quikgel drilling                                                                |
| -12.2'                                                                                                                       |       |                            | Trace of mic. silt in few very thin layers.                                          |                   |                                | mud at 7.5' Revert mud                                                               |
| -13.7'                                                                                                                       |       |                            | Grey fat clay, trace of mica, damp.                                                  |                   | 7                              | at 12.0' & 48.0'                                                                     |
| -15.2'                                                                                                                       | 25'   |                            | Trace of mic. silt in very thin layers.                                              |                   |                                | Weight of hammer                                                                     |
| -16.7'                                                                                                                       |       |                            | Several very thin layers of fine to med. sand.                                       |                   |                                | drove splitspoon                                                                     |
| -18.2'                                                                                                                       |       |                            | Layer of med. to coarse sand from approx. 29.7' to 30.0'                             |                   |                                | from 18.0' to 19.5'                                                                  |
| -19.7'                                                                                                                       |       |                            | Continued on sht 2                                                                   |                   |                                | 24.0' to 25.5', 25.5' to 27.0'.                                                      |
| -21.2'                                                                                                                       | 30'   |                            |                                                                                      |                   |                                | Date Hole:                                                                           |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | Drilled to 12.0'                                                                     |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | 20 Feb 1987 but                                                                      |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | suspended until                                                                      |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | 5 Mar 1987 awaiting                                                                  |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | rig w/ larger water                                                                  |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | pump.                                                                                |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | Undisturbed sample                                                                   |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | taken w/ 5" Shelby tube                                                              |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | from 29.0' to 30.0'. Jar                                                             |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | sample taken from bott.                                                              |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | of tube from 29.9' to                                                                |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | 30.0'.                                                                               |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | BLOWS PER FOOT:                                                                      |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | Number required to drive                                                             |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | 1 3/8" ID splitspoon w/                                                              |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | 140 lb. hammer falling                                                               |
|                                                                                                                              |       |                            |                                                                                      |                   |                                | 30".                                                                                 |

| DRILLING LOG (Cont Sheet) |       |                                                                                   | ELEVATION TOP OF HOLE                                                                                       |                           | 8.8' MLW                       |                                                                                      | Hole No. SH-147  |    |
|---------------------------|-------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------|--------------------------------------------------------------------------------------|------------------|----|
| PROJECT                   |       |                                                                                   | INSTALLATION                                                                                                |                           |                                |                                                                                      | SHEET            |    |
| Savannah Harbor Widening  |       |                                                                                   | Savannah, Ga.                                                                                               |                           |                                |                                                                                      | OF 2 SHEETS      |    |
| ELEVATION                 | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS<br>(Description)                                                                | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>J&R | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                  |    |
| -24.2'                    | 0     | c                                                                                 | d                                                                                                           | e                         |                                | f                                                                                    | BLOWS            |    |
| 22.7'                     |       |  | SM-Greyish brown silty med. to coarse sand, trace of mica & clay in thin layers, wet. Trace of fine gravel. |                           | 8                              | 40.5' to 42.0' - Water pump became clogged w/ much wood while cleaning out boring.   | 7                | 10 |
|                           | 35    |  | Greyish brown silty fine to med. sand.                                                                      |                           |                                |                                                                                      | 5                | 5  |
| -28.7'                    |       |  | SP-Greyish brown poorly graded fine to med. sand, trace of sand, trace of silt, wet.                        |                           | 9                              |                                                                                      | 8                | 21 |
| -30.2'                    |       |  | CH-Grey & brown fat clay w/ large piece of wood, trace of fine sand. (See remarks)                          |                           | 10                             | LAB CLASSIFICATION                                                                   | 36               | 31 |
| -31.4'                    | 40    |  | SP-Greyish tan poorly graded fine to med. sand, trace of silt, wet.                                         |                           | 11                             | No. Class LL PL PI                                                                   | 11 SM-H 74 36 38 | 28 |
| -33.2'                    |       |  | SM-Greyish tan silty med. sand, wet.                                                                        |                           | 12                             |                                                                                      | 43               | 33 |
| -36.2'                    | 45    |  | Med. to coarse grained, trace of fine gravel.                                                               |                           | 13                             |                                                                                      | 13               | 17 |
| -37.7'                    |       |  | Tan layer w/ some fine gravel at approx. 49.2' - 49.5'.                                                     |                           | 14                             |                                                                                      | 35               | 27 |
| -39.2'                    |       |  | SP-Greyish tan poorly graded coarse sand, some fine gravel, trace of silt, wet.                             |                           |                                |                                                                                      | 42               | 41 |
| -40.7'                    | 50    |  | Tan, fine to med. grained, no gravel.                                                                       |                           | 15                             |                                                                                      | 54               | 60 |
| -43.7'                    |       |  | SM-Greyish tan silty fine to med. sand, trace of mica & fine gravel, wet.                                   |                           | 16                             |                                                                                      | 67               |    |
| -45.2'                    | 55    |                                                                                   | Bottom of Boring @ 58.5'                                                                                    |                           |                                |                                                                                      |                  |    |
| -49.7'                    | 60    |                                                                                   |                                                                                                             |                           |                                |                                                                                      |                  |    |

| DIVISION                                                                                            |  | SHEET                                                 |  |
|-----------------------------------------------------------------------------------------------------|--|-------------------------------------------------------|--|
| DRILLING LOG                                                                                        |  | OF 2 SHEETS                                           |  |
| South Atlantic                                                                                      |  | Savannah Ga.                                          |  |
| 1. PROJECT                                                                                          |  | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 6" spiral |  |
| 2. LOCATION (City, State, or Station)                                                               |  | 11. DATUM FOR ELEVATION SHOWN (FSL or MSL)            |  |
| Savannah Harbor Widening                                                                            |  | MLW                      auger & fishtail             |  |
| X=837530      Y=758410                                                                              |  | 12. MANUFACTURER'S DESIGNATION OF DRILL               |  |
| 3. DRILLING AGENCY                                                                                  |  | Failing 314                                           |  |
| Savannah District                                                                                   |  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN        |  |
| 4. HOLE NO. (As shown on drawing title<br>and file number)                                          |  | DISTURBED      UNDISTURBED                            |  |
| SH-148                                                                                              |  | 10      0                                             |  |
| 5. NAME OF DRILLER                                                                                  |  | 14. TOTAL NUMBER CORE ROKES                           |  |
| L. L. LACON                                                                                         |  | 15. ELEVATION GROUND WATER                            |  |
| 6. DIRECTION OF HOLE                                                                                |  | 16. DATE HOLE                                         |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED      DEG. FROM VERT. |  | STARTED      COMPLETED                                |  |
|                                                                                                     |  | 1 Mar 1987      1 Apr 1987                            |  |
| 7. THICKNESS OF OVERBURDEN      60.0'                                                               |  | 17. ELEVATION TOP OF HOLE      10.0'                  |  |
| 8. DEPTH DRILLED INTO ROCK      0.0'                                                                |  | 18. TOTAL CORE RECOVERY FOR BORING      N/A           |  |
| 9. TOTAL DEPTH OF HOLE      60.0'                                                                   |  | 19. SIGNATURE OF INSPECTOR                            |  |
|                                                                                                     |  | J. Arthur      T. Nicholson                           |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)           | % CORE<br>RECOVER-<br>Y | BOX OR<br>SAMPLE<br>NO. / AR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)        |
|-----------|-------|--------|--------------------------------------------------------|-------------------------|------------------------------|---------------------------------------------------------------------------------------------|
| 10.0'     | 0'    |        |                                                        |                         |                              |                                                                                             |
|           |       |        | SC-Brown, fine, w/trace of roots.                      |                         | 1                            | Water level reading during drilling 3.0'                                                    |
|           |       |        | SM-Dark grey w/some sand, trace of mica & wood.        |                         | 2                            |                                                                                             |
| 5.5'      | 5'    |        | SC-Brown & grey, fine to med, trace of wood 6.0'-7.5'. |                         | 3                            | 24 hour water level reading 2.9'.                                                           |
|           |       |        | CH-Grey, w/trace of wood, sand, & mica.                |                         |                              |                                                                                             |
| 1.0'      | 10'   |        | SC-Tannish grey, fine, trace of mica.                  |                         | 4                            | NOTE: Jim Arthur logged hole from 0.0' to 49.5', Toni Nicholson logged from 49.5' to 60.0'. |
| -2.0'     |       |        | SP-Tannish grey, trace of silt & mica.                 |                         | 5                            | Began using Revert drilling mud at 7.5'.                                                    |
|           |       |        | SM-Grey & tannish grey, fine, trace of mica.           |                         |                              |                                                                                             |
| -8.0'     |       |        | Fine to med. w/sev. thin clayey layers.                |                         | 6                            |                                                                                             |
| -9.5'     | 20'   |        | SP-Greyish tan, med., trace of clay.                   |                         | 7                            |                                                                                             |
|           |       |        |                                                        |                         | 8                            |                                                                                             |
|           |       |        |                                                        |                         | 9                            |                                                                                             |
| -18.5'    | 25'   |        |                                                        |                         | 10                           |                                                                                             |
|           | 30'   |        |                                                        |                         |                              |                                                                                             |

Continued on sht 2

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.

**BLOWS PER FOOT:**

Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 25"

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE<br>+10.0' MLW |                                                      | Hole No. SH-148        |                                |                                                                                      |         |
|-------------------------------------|-------|-------------------------------------|------------------------------------------------------|------------------------|--------------------------------|--------------------------------------------------------------------------------------|---------|
| PROJECT<br>Savannah Harbor Widening |       | INSTALLATION<br>Savannah, Ga.       |                                                      | SHEET 2<br>OF 2 SHEETS |                                |                                                                                      |         |
| ELEVATION                           | DEPTH | LOG/ID                              | CLASSIFICATION OF MATERIALS<br>(Description)         | % CORE<br>RECOVERY     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BL O/S  |
| -20.0'                              | 30'   | c                                   | d                                                    |                        |                                |                                                                                      |         |
|                                     |       |                                     | SM-Tannish grey & grey, fine to med., trace of mica. |                        | 11                             |                                                                                      | 10      |
| -23.0'                              |       |                                     | CH-Greenish grey.                                    |                        | 12                             |                                                                                      | 10      |
| -24.5'                              | 35    |                                     | SM-Tannish grey, fine to med. trace of mica.         |                        | 13                             |                                                                                      | 24      |
|                                     |       |                                     | Med. grained.                                        |                        |                                |                                                                                      | 20      |
|                                     |       |                                     | Fine to med grained.                                 |                        | 14                             |                                                                                      | 14      |
|                                     | 40    |                                     | Trace of clay (thin layers).                         |                        |                                |                                                                                      | 22      |
|                                     |       |                                     | SP-Greyish tan, fine to med. w/piece of wood.        |                        |                                |                                                                                      | 23      |
|                                     |       |                                     | Solid wood from 48.0' to 49.2'.                      |                        | 15                             |                                                                                      | 24      |
| -36.5'                              | 45    |                                     | Grey, med., trace of clay.                           |                        |                                |                                                                                      | 16      |
|                                     |       |                                     | Tannish grey, fine to med, trace of fine gravel.     |                        | 16                             |                                                                                      | 44      |
|                                     | 50    |                                     | With rotten wood fragments up to 2".                 |                        |                                | NOTE: No soil recovered from 48.0 to 49.5', only recovered wood from 48.0 to 49.2'.  | 100/0.7 |
|                                     |       |                                     | No wood or gravel.                                   |                        | 17                             |                                                                                      | 37      |
|                                     |       |                                     | SM-Light grey, fine, trace of mica.                  |                        |                                |                                                                                      | 34      |
|                                     |       |                                     | Fine to med, w/trace of fine gravel.                 |                        | 18                             |                                                                                      | 46      |
| -45.5'                              | 55    |                                     |                                                      |                        |                                |                                                                                      | 34      |
|                                     |       |                                     |                                                      |                        | 19                             |                                                                                      | 54      |
|                                     |       |                                     |                                                      |                        |                                |                                                                                      | 62      |
| -50.0'                              | 60    |                                     | Bottom of Boring @ 60.0'.                            |                        |                                |                                                                                      | 58      |

Hole No. SH-201

| DRILLING LOG                                                                                                              |              | VISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                 |                                | SHEET 1 OF 1 SHEETS                                                                       |                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |              |                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/4" splitspoon, 5/16" fishtail |                                |                                                                                           |                                                                                                  |
| 2. LOCATION (Coordinates or Station) X-830569 Y-760861 GA. EAST                                                           |              |                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW             |                                |                                                                                           |                                                                                                  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |              |                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314        |                                |                                                                                           |                                                                                                  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-201                                                            |              |                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 5               |                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 0                                              |                                                                                                  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |              |                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                              |                                | 15. ELEVATION GROUND WATER N/A                                                            |                                                                                                  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                       |                                                                                                  | 16. DATE HOLE 5 FEB 92                                     |                                | 16. DATE HOLE 5 FEB 92                                                                    |                                                                                                  |
| 7. THICKNESS OF OVERBURDEN 60.9' (Water 42.9')                                                                            |              |                       |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                             |                                | 17. ELEVATION TOP OF HOLE 0.0'                                                            |                                                                                                  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |              |                       |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                     |                                | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                    |                                                                                                  |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                                              |              |                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.              |                                |                                                                                           |                                                                                                  |
| ELEVATION<br>0.0                                                                                                          | DEPTH<br>0.0 | LEGEND<br>c           | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>JAN | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f |                                                                                                  |
|                                                                                                                           |              |                       | Water.                                                                                           |                                                            |                                |                                                                                           | Scale change at 40.0'. Set 6" diameter casing by own weight to 43.4'.                            |
|                                                                                                                           | 40           |                       | Bottom of Harbor 42.9'                                                                           |                                                            |                                |                                                                                           |                                                                                                  |
| -42.9'                                                                                                                    | 45           |                       | (CL) Grey, silty, lean CLAY. Trace of fine sand.                                                 |                                                            | 1                              |                                                                                           | 15                                                                                               |
| -45.9'                                                                                                                    |              |                       |                                                                                                  |                                                            |                                |                                                                                           | 6                                                                                                |
|                                                                                                                           |              |                       | Lean clay, some fine sand, trace of silt.                                                        |                                                            | 2                              |                                                                                           | 21                                                                                               |
| -48.9'                                                                                                                    | 50           |                       | (SC) Light olive-grey, fine clayey SAND. Some silt.                                              |                                                            | 3                              |                                                                                           | 21                                                                                               |
| -51.9'                                                                                                                    |              |                       |                                                                                                  |                                                            |                                |                                                                                           | 45                                                                                               |
|                                                                                                                           |              |                       | Olive-grey, trace of silt.                                                                       |                                                            | 4                              |                                                                                           | 41                                                                                               |
|                                                                                                                           | 55           |                       |                                                                                                  |                                                            |                                |                                                                                           | 25                                                                                               |
|                                                                                                                           |              |                       |                                                                                                  |                                                            | 5                              |                                                                                           | 28                                                                                               |
|                                                                                                                           | 60           |                       |                                                                                                  |                                                            |                                |                                                                                           | 25                                                                                               |
| -60.9'                                                                                                                    |              |                       |                                                                                                  |                                                            |                                |                                                                                           | 24                                                                                               |
|                                                                                                                           |              |                       | Bottom of Boring 60.9'                                                                           |                                                            |                                |                                                                                           | 31                                                                                               |
|                                                                                                                           |              |                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                            |                                |                                                                                           | 43                                                                                               |
|                                                                                                                           |              |                       |                                                                                                  |                                                            |                                |                                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |

Hole No. SM-203

| DRILLING LOG                                                                                                              |            | VISION SOUTH ATLANTIC |                                                       | INSTALLATION SAVANNAH, GA.                                                                        |                              | SHEET 1 OF 1 SHEETS                                                                     |            |
|---------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------|------------|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |            |                       |                                                       | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 3/2" FISHTAIL                                         |                              |                                                                                         |            |
| 2. LOCATION (Coordinates or Station) X=831846 Y=759544 GA. EAST                                                           |            |                       |                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                    |                              |                                                                                         |            |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |            |                       |                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314                                               |                              |                                                                                         |            |
| 4. HOLE NO. (As shown on drawing title and file number) SH-203                                                            |            |                       |                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                        |                              | 13. DISTURBED : 8 UNDISTURBED : 0                                                       |            |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |            |                       |                                                       | 14. TOTAL NUMBER CORE BOXES                                                                       |                              | 0                                                                                       |            |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                       |                                                       | 15. ELEVATION GROUND WATER                                                                        |                              | N/A                                                                                     |            |
| 7. THICKNESS OF OVERBURDEN 60.4' (Water 42.4')                                                                            |            |                       |                                                       | 16. DATE HOLE                                                                                     |                              | STARTED 7 FEB 92 COMPLETED 7 FEB 92                                                     |            |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |            |                       |                                                       | 17. ELEVATION TOP OF HOLE                                                                         |                              | 0.0'                                                                                    |            |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                              |            |                       |                                                       | 18. TOTAL CORE RECOVERY FOR BORING                                                                |                              | N/A                                                                                     |            |
|                                                                                                                           |            |                       |                                                       | 19. SIGNATURE OF INSPECTOR                                                                        |                              | JAMES ARTHUR, P.G.                                                                      |            |
| ELEVATION<br>0.0                                                                                                          | DEPTH<br>0 | LEGEND<br>c           | CLASSIFICATION OF MATERIALS<br>(Description)<br>d     | % CORE<br>RECOVERY<br>e                                                                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)     | BLOWS<br>g |
|                                                                                                                           | 40         |                       | Water                                                 |                                                                                                   |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 43.5'.                   |            |
|                                                                                                                           |            |                       | Bottom of Harbor 42.4'                                |                                                                                                   |                              |                                                                                         |            |
| -42.4'                                                                                                                    |            |                       | (MH) Very dark grey to black clayey SILT.             |                                                                                                   | 1                            |                                                                                         |            |
| -43.3'                                                                                                                    |            |                       | (CL) Dark grey, silty, lean CLAY. Trace of fine sand. |                                                                                                   | 2                            | Weight of rods drove split spoon from 42.4' to 43.3'. Jar sample 2 from +3.3' to +3.9'. | 16         |
| -45.4'                                                                                                                    |            |                       | (SM) Dark grey, fine, silty SAND. Some silt.          |                                                                                                   | 3                            |                                                                                         | 35         |
| -46.9'                                                                                                                    |            |                       | (SC) Dark grey, fine, clayey SAND. Some silt.         |                                                                                                   | 4                            |                                                                                         | 63         |
|                                                                                                                           | 50         |                       |                                                       |                                                                                                   |                              |                                                                                         | 31         |
|                                                                                                                           |            |                       | Olive,                                                |                                                                                                   | 5                            |                                                                                         | 31         |
| -51.4'                                                                                                                    |            |                       | Several hard layers up to 1/4" thick.                 |                                                                                                   |                              |                                                                                         | 32         |
| -52.9'                                                                                                                    |            |                       |                                                       |                                                                                                   |                              |                                                                                         | 24         |
| -54.4'                                                                                                                    |            |                       | (SM) Light olive-grey, fine silty SAND. Some clay.    |                                                                                                   | 6                            |                                                                                         | 100/0.3    |
| -55.9'                                                                                                                    |            |                       | (SC) Olive-grey, fine clayey SAND. Some silt.         |                                                                                                   | 7                            |                                                                                         | 77         |
|                                                                                                                           | 60         |                       |                                                       |                                                                                                   |                              |                                                                                         | 23         |
| -60.4'                                                                                                                    |            |                       | Bottom of Boring 60.4'                                |                                                                                                   | 8                            |                                                                                         | 24         |
|                                                                                                                           |            |                       |                                                       |                                                                                                   |                              |                                                                                         | 28         |
|                                                                                                                           |            |                       |                                                       | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |                              |                                                                                         |            |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                          |            |                       |                                                       |                                                                                                   |                              |                                                                                         |            |

Hole No. SM-204

| DRILLING LOG                                                                                                                 |            | VISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLITSPOON, 5/2" FISHTAIL |                              |                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X-832738 Y-759052 GA. EAST                                                           |            |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                                      |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                              |                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-204                                                            |            |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4              |                              | DISTURBED<br>0                                                                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                              | UNDISTURBED<br>0                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                          |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                              | 16. DATE HOLE<br>7 FEB 92                                                                                            |  |
| 7. THICKNESS OF OVERBURDEN<br>57.3' (Water 43.8')                                                                            |            |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                              | COMPLETED<br>7 FEB 92                                                                                                |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                    |                              | X                                                                                                                    |  |
| 9. TOTAL DEPTH OF HOLE<br>57.3'                                                                                              |            |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                                                      |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c              | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                                 | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                            |  |
|                                                                                                                              |            |                          | Water                                                                                            |                                                              |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.3'.                                                |  |
|                                                                                                                              | 40         |                          | Bottom of Harbor 43.8'                                                                           |                                                              |                              |                                                                                                                      |  |
| -43.8'                                                                                                                       | 45         |                          | (SC) Dark olive-grey, fine clayey SAND.<br>Trace of silt.                                        |                                                              | 1                            | Weight of rods drove split spoon from 43.8' to 44.5'.<br>PSI                                                         |  |
| -45.3'                                                                                                                       |            |                          | Dark grey.                                                                                       |                                                              |                              | Took 150 hydraulic pressure to fish tail from 53.7' to 53.8'.<br>Boring terminated at 57.3' due to shipping traffic. |  |
|                                                                                                                              | 50         |                          |                                                                                                  |                                                              | 2                            |                                                                                                                      |  |
|                                                                                                                              |            |                          | (SM) Light olive-grey, fine, silty SAND.<br>Some clay.                                           |                                                              | 3                            |                                                                                                                      |  |
| -52.8'                                                                                                                       | 55         |                          |                                                                                                  |                                                              |                              |                                                                                                                      |  |
| -55.8'                                                                                                                       |            |                          | (SC) Olive-grey, fine clayey SAND.<br>Some silt.                                                 |                                                              | 4                            |                                                                                                                      |  |
| -57.3'                                                                                                                       |            |                          |                                                                                                  |                                                              |                              |                                                                                                                      |  |
|                                                                                                                              |            |                          | Bottom of Boring 57.3'                                                                           |                                                              |                              |                                                                                                                      |  |
|                                                                                                                              |            |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30".                    |  |



Hole No. SH-205

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                         | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                         | 10. SIZE AND TYPE OF BIT<br>1 1/2" splitspoon, 5/8" fishtail |                              |                                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X-833763 Y-758711 GA. EAST                                                           |            |                            |                                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314        |                              |                                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-205                                                            |            |                            |                                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | 15. ELEVATION GROUND WATER N/A                                                                          |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                         | 14. TOTAL NUMBER CORE BOXES 0                                |                              | 16. DATE HOLE                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                         | 15. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | 17. ELEVATION TOP OF HOLE 0.0'                                                                          |  |
| 7. THICKNESS OF OVERBURDEN 60.2' (WATER 40.8')                                                                               |            |                            |                                                                                                         | 16. DATE HOLE                                                |                              | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                                |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                         | 17. ELEVATION TOP OF HOLE 0.0'                               |                              | 19. SIGNATURE OF INSPECTOR                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 60.2'                                                                                                 |            |                            |                                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING N/A %                     |                              | JAMES ARTHUR, P.G.                                                                                      |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>s                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                       | % CORE<br>RECOVERY<br>EPG<br>JAR                             | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>BLOWS            |  |
|                                                                                                                              |            |                            | Water                                                                                                   |                                                              |                              | Scale change at 40.0'.<br><br>Set 6" diameter casing by own<br>weight to 41.6'.                         |  |
|                                                                                                                              | 35         |                            |                                                                                                         |                                                              |                              |                                                                                                         |  |
|                                                                                                                              | 40         |                            | Bottom of Harbor 40.8'                                                                                  |                                                              |                              |                                                                                                         |  |
| -40.8'                                                                                                                       |            |                            | (SM) Olive-grey fine silty SAND, trace of<br>clay, layer of coarse sand from 40.8' to<br>approx. 41.0'. |                                                              | 1                            | 30                                                                                                      |  |
|                                                                                                                              | 45         |                            |                                                                                                         |                                                              | 2                            | 54                                                                                                      |  |
|                                                                                                                              | 50         |                            |                                                                                                         |                                                              |                              | 75                                                                                                      |  |
|                                                                                                                              | 52.8'      |                            | Some clay at approx. 53.8.                                                                              |                                                              | 3                            | 100/0.7'                                                                                                |  |
| -54.3'                                                                                                                       | 55         |                            | (SC) Dark grey, fine clayey SAND, trace of sil.                                                         |                                                              | 4                            | 49                                                                                                      |  |
|                                                                                                                              | 57.3'      |                            | Olive-grey.                                                                                             |                                                              |                              | 68                                                                                                      |  |
| -58.8'                                                                                                                       | 60         |                            | Light olive-grey, some sil.                                                                             |                                                              | 5                            | 62                                                                                                      |  |
| -60.2'                                                                                                                       |            |                            | Bottom of Boring 60.2'                                                                                  |                                                              |                              | 45                                                                                                      |  |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.  |                                                              |                              | 28                                                                                                      |  |
|                                                                                                                              |            |                            |                                                                                                         |                                                              |                              | 28                                                                                                      |  |
|                                                                                                                              |            |                            |                                                                                                         |                                                              |                              | 30                                                                                                      |  |
|                                                                                                                              |            |                            |                                                                                                         |                                                              |                              | 100/0.9'                                                                                                |  |
|                                                                                                                              |            |                            |                                                                                                         |                                                              |                              | BLOWS PER FOOT:<br><br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-206

| DRILLING LOG                                                                                                                 |               | 150N<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                   |                              | SHEET 1<br>OF 1 SHEETS                                                                    |  |          |
|------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|--|----------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                        |                                                   | 10. SIZE AND TYPE OF BIT<br>1 1/2" spitspoon, 5/2" flange                                       |                              |                                                                                           |  |          |
| 2. LOCATION (Coordinates or Station)<br>X=834685 Y=758482 GA. EAST                                                           |               |                        |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                               |                              |                                                                                           |  |          |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                        |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                          |                              |                                                                                           |  |          |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-206                                                            |               |                        |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                      |                              | DISTURBED<br>6<br>UNDISTURBED<br>0                                                        |  |          |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                        |                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                |                              |                                                                                           |  |          |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                        |                                                   | 15. ELEVATION GROUND WATER<br>N/A                                                               |                              |                                                                                           |  |          |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (WATER 40.5')                                                                            |               |                        |                                                   | 16. DATE HOLE                                                                                   |                              | STARTED<br>21 MAR 92<br>COMPLETED<br>21 MAR 92                                            |  |          |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |               |                        |                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                               |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                 |  |          |
| 9. TOTAL DEPTH OF HOLE<br>60.0'                                                                                              |               |                        |                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                |                              |                                                                                           |  |          |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>+            | CLASSIFICATION OF MATERIALS<br>(Description)<br>a | % CORE<br>RECOV-<br>ERY<br>JAR                                                                  | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  | BLOWS    |
|                                                                                                                              |               |                        | Water                                             |                                                                                                 |                              | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 40.9'.               |  |          |
|                                                                                                                              | 35            |                        |                                                   |                                                                                                 |                              |                                                                                           |  |          |
|                                                                                                                              | 40            |                        | Bottom of Harbor 40.5'                            |                                                                                                 |                              |                                                                                           |  |          |
| -40.5'                                                                                                                       |               |                        | (SM) Olive-grey fine silty SAND, trace of clay.   |                                                                                                 | 1                            |                                                                                           |  | 28       |
| -42.0'                                                                                                                       |               |                        | Light olive-grey.                                 |                                                                                                 |                              |                                                                                           |  | 98       |
| -43.5'                                                                                                                       |               |                        | (SC) Olive-grey fine clayey SAND, some silt.      |                                                                                                 | 2                            |                                                                                           |  | 22       |
| -46.5'                                                                                                                       |               |                        | Some sand lenses.                                 |                                                                                                 |                              |                                                                                           |  | 29       |
| -48.0'                                                                                                                       |               |                        | (SM) Olive-grey fine silty SAND, trace of clay.   |                                                                                                 | 3                            |                                                                                           |  | 93       |
| -49.5'                                                                                                                       |               |                        | Some clay.                                        |                                                                                                 |                              |                                                                                           |  | 100/0.4' |
|                                                                                                                              | 50            |                        |                                                   |                                                                                                 |                              |                                                                                           |  | 55       |
|                                                                                                                              | 55            |                        | Trace of clay.                                    |                                                                                                 | 4                            |                                                                                           |  | 84       |
| -54.0'                                                                                                                       |               |                        |                                                   |                                                                                                 |                              |                                                                                           |  | 50       |
| -55.5'                                                                                                                       |               |                        | (SC) Olive-grey fine clayey SAND, some silt.      |                                                                                                 | 5                            |                                                                                           |  | 49       |
| -57.0'                                                                                                                       |               |                        | Gray, (trace of silt).                            |                                                                                                 |                              |                                                                                           |  | 33       |
|                                                                                                                              | 60            |                        |                                                   |                                                                                                 | 6                            |                                                                                           |  | 30       |
| -60.0'                                                                                                                       |               |                        | Bottom of Boring 60.0'                            |                                                                                                 |                              |                                                                                           |  | 26       |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |               |                        |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spitspoon w/140 lb. hammer falling 30". |                              |                                                                                           |  |          |

Hole No. 317-210

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                 |                         | SHEET 1<br>OF 1 SHEETS                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLIT SPOON, 5/2" FISHTAIL |                         |                                                                                                    |  |
| 2. LOCATION (Coordinates or Station)<br>X-836591 Y-757792 GA. EAST                                                           |       |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW             |                         |                                                                                                    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314        |                         |                                                                                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-208                                                            |       |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>5               |                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED<br>10                                      |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                              |                         |                                                                                                    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                             |                         |                                                                                                    |  |
| 7. THICKNESS OF OVERBURDEN<br>60.1' (Water 45.1')                                                                            |       |                            |                                                                                                  | 16. DATE HOLE<br>18 DEC 91                                    |                         | 16. DATE HOLE<br>STARTED<br>18 DEC 91                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                             |                         | 17. ELEVATION TOP OF HOLE<br>COMPLETED<br>18 DEC 91                                                |  |
| 9. TOTAL DEPTH OF HOLE<br>60.1'                                                                                              |       |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                     |                         |                                                                                                    |  |
| 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                                             |       |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |                         |                                                                                                    |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE<br>RECOVERY                                            | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)                |  |
| 0.0                                                                                                                          | 0     |                            |                                                                                                  |                                                               |                         | BLOWS                                                                                              |  |
|                                                                                                                              | 40    |                            | Water                                                                                            |                                                               |                         | Scale change at 40.0'. Set 6" diameter casing by own weight to 45.7'.                              |  |
|                                                                                                                              | 45    |                            | Bottom of Harbor 45.1'                                                                           |                                                               |                         |                                                                                                    |  |
| -45.1'                                                                                                                       | 45    |                            | (SC) Olive grey, fine clayey SAND. Some silt.                                                    |                                                               | 1                       | 41                                                                                                 |  |
| -46.6'                                                                                                                       |       |                            | occasional layer of fine silty sand up to 0.2'                                                   |                                                               |                         | 75                                                                                                 |  |
| -48.1'                                                                                                                       |       |                            | No silty sand layers.                                                                            |                                                               |                         | 47                                                                                                 |  |
|                                                                                                                              | 50    |                            |                                                                                                  |                                                               | 2                       | 63                                                                                                 |  |
| -51.1'                                                                                                                       |       |                            | (SM) Olive-grey, fine silty SAND. Trace of clay.                                                 |                                                               | 3                       | 100/0.7'                                                                                           |  |
|                                                                                                                              |       |                            |                                                                                                  |                                                               |                         | 100/0.8'                                                                                           |  |
|                                                                                                                              | 55    |                            |                                                                                                  |                                                               | 4                       | 100/0.3'                                                                                           |  |
| -57.1'                                                                                                                       |       |                            | Some clay.                                                                                       |                                                               |                         | 79                                                                                                 |  |
|                                                                                                                              |       |                            |                                                                                                  |                                                               | 5                       | 56                                                                                                 |  |
| -60.1'                                                                                                                       | 60    |                            | Bottom of Boring 60.1'                                                                           |                                                               |                         | 46                                                                                                 |  |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                               |                         | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/ 140 lb. hammer falling 30". |  |

| DRILLING LOG                                                                                                                 |             | POSITION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                               |                              | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5 1/2" FISHTAIL |                              |                                                                                                                                                                                                          |  |
| 2. LOCATION (Coordinates or Station)<br>X=837605 Y=757743 GA. EAST                                                           |             |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                              |                                                                                                                                                                                                          |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314      |                              |                                                                                                                                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-209                                                            |             |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4             |                              | DISTURBED<br>UNDISTURBED<br>0                                                                                                                                                                            |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                            |                              |                                                                                                                                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                           |                              |                                                                                                                                                                                                          |  |
| 7. THICKNESS OF OVERBURDEN<br>61.0' (Water 52.0')                                                                            |             |                            |                                                                                                  | 16. DATE HOLE<br>20 NOV 91                                  |                              | STARTED<br>COMPLETED<br>20 NOV 91                                                                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                           |                              |                                                                                                                                                                                                          |  |
| 9. TOTAL DEPTH OF HOLE<br>61.0'                                                                                              |             |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                   |                              |                                                                                                                                                                                                          |  |
|                                                                                                                              |             |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.            |                              |                                                                                                                                                                                                          |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                                | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g                                                                                                                 |  |
|                                                                                                                              |             |                            | Water                                                                                            |                                                             |                              | Scale change at 50.0'. Set 6" diameter casing by own weight to 52.3'.                                                                                                                                    |  |
|                                                                                                                              | 50          |                            | Bottom of Harbor 52.0'                                                                           |                                                             |                              | No split spoon recovery of first drive. Re-drove to 53.5' then continued drive to 55.0'. Driller reported toolstring was binding inside casing from 53.5' to 55.0' and caused the high blow count of 54. |  |
| -52.0'                                                                                                                       |             |                            | (SM) Dark grey, coarse silty SAND. Some fine gravel, trace of clay.                              |                                                             | 1                            | 14                                                                                                                                                                                                       |  |
| -53.5'                                                                                                                       |             |                            | (SP) Greyish-tan, coarse, poorly graded SAND. Some fine gravel, trace of silt.                   |                                                             | 2                            | 54                                                                                                                                                                                                       |  |
| -55.0'                                                                                                                       | 55          |                            | (SC) Olive-grey, fine clayey SAND. Some silt.                                                    |                                                             | 3                            | Made batch of Zeogel drilling mud at 48.8'. Reset casing to 49.0'.                                                                                                                                       |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                             |                              | 34                                                                                                                                                                                                       |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                             |                              | 31                                                                                                                                                                                                       |  |
|                                                                                                                              |             |                            |                                                                                                  |                                                             |                              | 23                                                                                                                                                                                                       |  |
| -61.0'                                                                                                                       | 60          |                            |                                                                                                  |                                                             | 4                            | 38                                                                                                                                                                                                       |  |
|                                                                                                                              |             |                            | Bottom of Boring 61.0'                                                                           |                                                             |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30".                                                                                                        |  |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                             |                              |                                                                                                                                                                                                          |  |

| DRILLING LOG                                                                            |       | DIVISION                   |                                                                        | HOLE NO.                                                                                      |                   | ENGINEERS                                                                      |  | SHEET                        |  |
|-----------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|------------------------------|--|
| PROJECT                                                                                 |       | SOUTH ATLANTIC             |                                                                        | INSTALLATION IS-5                                                                             |                   | SAVANNAH RIVER HARBOR                                                          |  | OF 2 SHEETS                  |  |
| LOCATION (Continuation of Station)                                                      |       | SAVANNAH RIVER EXPLORATION |                                                                        | DATE AND TYPE OF BIT                                                                          |                   | 1 3/8" ID SPLITSPOON                                                           |  | 11 DATUM FOR ELEVATION SHOWN |  |
| DRILLING AGENCY                                                                         |       | SAVANNAH RIVER STA. 12-158 |                                                                        | MANUFACTURE'S DESIGNATION OF DRILL                                                            |                   | MLW                                                                            |  |                              |  |
| HOLE NO. (As shown on drawing title) and file number                                    |       | CS-6A                      |                                                                        | TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                         |                   | UNDISTURBED                                                                    |  |                              |  |
| NAME OF DRILLER                                                                         |       | T. W. SCOTT                |                                                                        | TOTAL NUMBER CORE BOXES                                                                       |                   | ELEVATION GROUND WATER                                                         |  |                              |  |
| DIRECTION OF HOLE                                                                       |       | VERTICAL                   |                                                                        | DATE HOLE                                                                                     |                   | STARTED                                                                        |  | COMPLETED                    |  |
| THICKNESS OF OVERBURDEN                                                                 |       | -56.5'                     |                                                                        | ELEVATION TOP OF HOLE                                                                         |                   | 0.0' MLW                                                                       |  |                              |  |
| DEPTH DRILLED INTO ROCK                                                                 |       | 0.0'                       |                                                                        | TOTAL CORE RECOVERY FOR BORING                                                                |                   | 1                                                                              |  |                              |  |
| TOTAL DEPTH OF HOLE                                                                     |       | -56.5'                     |                                                                        | SIGNATURE OF INSPECTOR                                                                        |                   | DAVID BELVILLE, GEOLOGIST                                                      |  |                              |  |
| ELEVATION                                                                               | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS (Description)                              | CORE RECOVERY                                                                                 | NO. OF SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |                              |  |
| -26.5                                                                                   | 0'    |                            | WATER DEPTH 26.5'                                                      |                                                                                               |                   |                                                                                |  |                              |  |
| -32.0                                                                                   | 5'    |                            | 0' - BOTTOM OF RIVER                                                   |                                                                                               |                   |                                                                                |  |                              |  |
|                                                                                         |       |                            | MH. DARK GREEN, WATER SATURATED MICACEOUS SANDY FAT SILT               |                                                                                               |                   |                                                                                |  |                              |  |
|                                                                                         | 10'   |                            | SM. DARK GRAY, LOOSE, SILTY, MICACEOUS FINE SAND                       | 2                                                                                             |                   |                                                                                |  |                              |  |
| -39.0                                                                                   | 15'   |                            | LIGHT GREEN TO LIGHT GRAY, DENSE, SILTY, MICACEOUS FINE TO MEDIUM SAND | 3                                                                                             |                   | 100/0.9                                                                        |  |                              |  |
|                                                                                         | 20'   |                            |                                                                        | 4                                                                                             |                   | 100/0.6                                                                        |  |                              |  |
| -47.0                                                                                   | 25'   |                            | GREEN, DENSE, SILTY, FINE SAND                                         | 5                                                                                             |                   | 100/0.6                                                                        |  |                              |  |
| -51.5                                                                                   |       |                            | continued on sheet No. 2                                               |                                                                                               |                   | 100/0.5                                                                        |  |                              |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System. |       |                            |                                                                        | BLOWS PER FOOT:<br>Number required to drive 1 1/4" ID splitspoon w/140 lb hammer falling 30". |                   |                                                                                |  |                              |  |

| DRILLING LOG (Cont Sheet) |       |        | Hole No. CS-6A                               |                    |                         |                                                                                      |                                          |
|---------------------------|-------|--------|----------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|------------------------------------------|
| PROJECT                   |       |        | ARMY DISTRICT                                |                    |                         |                                                                                      |                                          |
| SAVANNAH RIVER EMULSION   |       |        | SAVANNAH RIVER HARBOR                        |                    |                         |                                                                                      |                                          |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) | BLOWS                                    |
| -56.4                     | 30    |        | SM. GREEN, DENSE,<br>SILTY FINE SAND         |                    | 6                       |                                                                                      | 100/0.3<br>100/0.3<br>100/0.5<br>100/0.4 |
|                           |       |        | BOTTOM OF HOLE<br>-56.4 MLW                  |                    |                         |                                                                                      |                                          |

FOR  
 INFORMATION  
 ONLY

Hole No. CS-100

| DRILLING LOG                                                                                                                 |       | INSTALLATION                                         |                                                       | SHEET 1 OF 2 SHEETS                                                                                 |                              |                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------|
| 1. PROJECT<br>New Bulk Head                                                                                                  |       | 10. SIZE AND TYPE OF BIT<br>1 3/8" I.D. SPLITSPOON   |                                                       |                                                                                                     |                              |                                                                                       |
| 2. LOCATION (Coordinates or Station)<br>SEE PLAN                                                                             |       | 11. DATUM FOR ELEVATION<br>MLW                       |                                                       |                                                                                                     |                              |                                                                                       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>C ME 750H |                                                       |                                                                                                     |                              |                                                                                       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>CS - 100                                                          |       | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN       |                                                       | DISTURBED<br>8                                                                                      |                              |                                                                                       |
|                                                                                                                              |       | 14. TOTAL NUMBER CORE BOXES                          |                                                       | UNDISTURBED<br>0                                                                                    |                              |                                                                                       |
| 5. NAME OF DRILLER<br>SCOTT                                                                                                  |       | 15. ELEVATION GROUND WATER                           |                                                       |                                                                                                     |                              |                                                                                       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 16. DATE HOLE                                        |                                                       | STARTED -<br>12 JULY 1976<br>COMPLETED<br>13 JULY 1976                                              |                              |                                                                                       |
| 7. THICKNESS OF OVERBURDEN<br>70.5'                                                                                          |       | 17. ELEVATION TOP OF HOLE<br>11.89'                  |                                                       |                                                                                                     |                              |                                                                                       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       | 18. TOTAL CORE RECOVERY FOR BORING                   |                                                       |                                                                                                     |                              |                                                                                       |
| 9. TOTAL DEPTH OF HOLE<br>70.5'                                                                                              |       | 19. SIGNATURE OF INSPECTOR<br>C. DAVIS               |                                                       |                                                                                                     |                              |                                                                                       |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                               | CLASSIFICATION OF MATERIALS<br>(See Appendix)         | WATER CONTENT<br>%<br>7.7                                                                           | BOX OR<br>SAMPLE<br>NO.<br>1 | REMARKS<br>(Drilling time, water loss, slough at<br>weathering, etc., if significant) |
| 11.8                                                                                                                         | 0     |                                                      | SH - Tan silty fine and<br>medium sand                |                                                                                                     |                              |                                                                                       |
|                                                                                                                              | 5     |                                                      |                                                       |                                                                                                     | 2                            | W.T. - 5.0'<br>DATE: 12 July 1976<br>Depth to water during<br>drilling                |
|                                                                                                                              | 10    |                                                      | OH - Gray organ                                       |                                                                                                     |                              |                                                                                       |
|                                                                                                                              | 15    |                                                      |                                                       |                                                                                                     |                              |                                                                                       |
|                                                                                                                              | 20    |                                                      | With thin sand layers                                 | 75.3                                                                                                | 4                            | W.T. - 4.0'<br>Water table reading<br>24 hours after hole<br>completed.               |
|                                                                                                                              | 25    |                                                      | SP-SH - Gray fine and med-<br>ium sand with<br>gravel | 21.5                                                                                                | 6                            |                                                                                       |
|                                                                                                                              | 30    |                                                      | Continued on sheet 2                                  |                                                                                                     |                              |                                                                                       |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                                |       |                                                      |                                                       | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/140<br>lb. hammer falling 30" |                              |                                                                                       |

| PROJECT       |       |        | INSTALLATION                                     |                           | Hole No. CS - 100 |                                                                                                |
|---------------|-------|--------|--------------------------------------------------|---------------------------|-------------------|------------------------------------------------------------------------------------------------|
| New Bulk Head |       |        | Engineer Depot                                   |                           | SHEET 2 OF 2      |                                                                                                |
| ELEVATION     | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)     | W. EQUIV. RECOMM. PRY % c | BOX OF SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>R. BLANKS |
| a             | b     | c      | d                                                | e                         | f                 | g                                                                                              |
|               | 30    |        | SP- SM - Gray, fine and medium sand with gravel. |                           |                   | 20                                                                                             |
|               | 35    |        |                                                  |                           |                   | 23                                                                                             |
|               | 40    |        |                                                  |                           |                   | 27                                                                                             |
|               | 45    |        |                                                  |                           |                   | 34                                                                                             |
|               | 50    |        |                                                  |                           |                   | 46                                                                                             |
|               | 55    |        |                                                  |                           |                   | 46                                                                                             |
|               | 60    |        | SM - Gray silty fine sand                        | 23.4                      | 7                 | 43                                                                                             |
|               | 65    |        | ML - Green clayey silt                           | 45.4                      | 8                 | 37                                                                                             |
|               | 70    |        |                                                  |                           |                   | 30                                                                                             |

58.0

FOR  
EXPERIMENTAL  
ONLY



# SAVANNAH HARBOR BORING LOGS

From Station 50+000

To

Station 70+000

Hole No. SH-36

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                   | INSTALLATION<br>Savannah, GA                      |                         | SHEET 1<br>OF 2 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-------------------------------------------------------------------|---------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |                            |                                                                   | 10. SIZE AND TYPE OF BIT, 3/8" ID splitspoon      |                         |                                                                                                     |  |
| 2. LOCATION (Coordinate or Station)<br>Sta 64+000N, R= "24"                                                                  |       |                            |                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)<br>MLW |                         |                                                                                                     |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75 |                         |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-36                                                             |       |                            |                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN        |                         | DISTURBED<br>6<br>UNDISTURBED<br>0                                                                  |  |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |       |                            |                                                                   | 14. TOTAL NUMBER CORE BORES                       |                         |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                   | 15. ELEVATION GROUND WATER                        |                         |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>55.5'                                                                                          |       |                            |                                                                   | 16. DATE HOLE<br>STARTED<br>27 Nov 77             |                         | COMPLETED<br>27 Nov 77                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                   | 17. ELEVATION TOP OF HOLE<br>0.0 MLW              |                         |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>-55.5' MLW                                                                                         |       |                            |                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>%           |                         |                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                   | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN  |                         |                                                                                                     |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                      | % CORE<br>RECOVER-<br>ERY                         | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |  |
| 0.0-MLW                                                                                                                      | 0.0   | c                          | d                                                                 | e                                                 | f                       | g                                                                                                   |  |
|                                                                                                                              | 5'    |                            | Water                                                             |                                                   |                         |                                                                                                     |  |
|                                                                                                                              | 10'   |                            |                                                                   |                                                   |                         |                                                                                                     |  |
|                                                                                                                              | 15'   |                            |                                                                   |                                                   |                         |                                                                                                     |  |
|                                                                                                                              | 19.5' |                            | Bottom of river -19.5'                                            |                                                   | JAR                     | BLOWS                                                                                               |  |
| -19.5                                                                                                                        | 20'   |                            | OH - Gray soft organic clayey silt                                |                                                   | 1                       | 0                                                                                                   |  |
| -22.5                                                                                                                        | 25'   |                            | SP - Brown and gray poorly graded sand with some soft silt layers |                                                   | 2                       | 0<br>6<br>12<br>11                                                                                  |  |
| -28.5                                                                                                                        | 30'   |                            | SM - Gray medium silty sand                                       |                                                   | 3                       | 14                                                                                                  |  |
| -30.0                                                                                                                        |       |                            | Continued on sheet 2                                              |                                                   |                         | 30                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                   |                                                   |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30' |  |

NOTE: Soils field classified  
in accordance with the Unified  
Soil Classification System.

| PROJECT         |       | INSTALLATION |                                                          | Hole No.                |                         |                                                                                      |
|-----------------|-------|--------------|----------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------|
| Savannah Harbor |       | Savannah, GA |                                                          | SH-36                   |                         |                                                                                      |
|                 |       |              |                                                          | SHEET 2<br>OF 2 SHEETS  |                         |                                                                                      |
| ELEVATION       | DEPTH | LEGEND       | CLASSIFICATION OF MATERIALS<br>(Description)             | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a               | b     | c            | d                                                        | e                       | f                       | g                                                                                    |
|                 |       |              | SM - Gray medium silty sand                              |                         | JAR                     | BLOWS                                                                                |
|                 |       |              |                                                          |                         |                         | 29                                                                                   |
|                 |       |              | With soft fat clayey silt<br>layers                      |                         |                         | 19                                                                                   |
|                 |       |              |                                                          |                         |                         | 16                                                                                   |
| -35.0           | 35'   |              |                                                          |                         |                         | 33                                                                                   |
|                 |       |              | SP - Tan poorly graded sand                              |                         | 4                       | 50                                                                                   |
|                 |       |              |                                                          |                         |                         | 53                                                                                   |
|                 | 40'   |              |                                                          |                         |                         | 50                                                                                   |
|                 |       |              |                                                          |                         |                         | 51                                                                                   |
| -43.5           |       |              |                                                          |                         |                         | 49                                                                                   |
|                 | 45'   |              |                                                          |                         | 5                       | 90                                                                                   |
|                 |       |              | MH - Green very fine sandy<br>and clayey silt, very hard |                         |                         | 100/0.7                                                                              |
|                 |       |              |                                                          |                         |                         | 100                                                                                  |
|                 | 50'   |              |                                                          |                         |                         | 100/0.9                                                                              |
|                 |       |              |                                                          |                         |                         | 100/0.8                                                                              |
|                 |       |              |                                                          |                         | 6                       | 99                                                                                   |
| -55.5           | 55'   |              |                                                          |                         |                         | 96                                                                                   |
|                 |       |              | Bottom of hole -55.5' MLW                                |                         |                         |                                                                                      |

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah, GA,                                                                 |                                | Hole No. SH-37               | SHEET 1<br>OF 2 SHEETS                                                                              |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-----------------------------------------------------------------------------------------------|--------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |             |                            | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                 |                                |                              |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>Sta 63+000N, R= "23" (X-845560 Y-758590)                                             |             |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                             |                                |                              |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Hemwood                                |                                |                              |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-37                                                             |             |                            | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                                                |                                | DISTURBED<br>8               | UNDISTURBED<br>0                                                                                    |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |             |                            | 14. TOTAL NUMBER CORE BOXES                                                                   |                                |                              |                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            | 15. ELEVATION GROUND WATER                                                                    |                                |                              |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN 55.5'                                                                                             |             |                            | 16. DATE HOLE STARTED<br>4 Nov 77                                                             |                                | COMPLETED<br>4 Nov 77        |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            | 17. ELEVATION TOP OF HOLE 0.0 MLW                                                             |                                |                              |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE -55.5' MLW                                                                                            |             |                            | 18. TOTAL CORE RECOVERY FOR BORING                                                            |                                | %                            |                                                                                                     |
|                                                                                                                              |             |                            | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                              |                                |                              |                                                                                                     |
| ELEVATION<br>0.0 MLW                                                                                                         | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |
|                                                                                                                              |             |                            | Water                                                                                         |                                |                              |                                                                                                     |
| -4.5                                                                                                                         | 5'          |                            | Bottom of river -4.5'                                                                         |                                | JAR                          | BLOWS                                                                                               |
|                                                                                                                              |             |                            | SM - Greenish gray silty fine sand                                                            | 1                              |                              | 12                                                                                                  |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 14                                                                                                  |
| -8.5                                                                                                                         | 10'         |                            | MH - Gray fat clayey silt<br>interbedded with some sand                                       | 2                              |                              | 11                                                                                                  |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 9                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 9                                                                                                   |
| -13.5                                                                                                                        | 15'         |                            | SM - Gray silty fine sand<br>with clayey silt layers                                          | 3                              |                              | 5                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 4                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 5                                                                                                   |
| -17.5                                                                                                                        | 20'         |                            | MH - Gray fat clayey silt                                                                     | 4                              |                              | 4                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 3                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 3                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 4                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 6                                                                                                   |
| -25.5                                                                                                                        | 25'         |                            | CH - Gray fat stiff clay                                                                      | 5                              |                              | 7                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 8                                                                                                   |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | 7                                                                                                   |
| -30.0                                                                                                                        | 30'         |                            | Continued on sheet 2                                                                          |                                |                              | 7                                                                                                   |
|                                                                                                                              |             |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. |                                |                              |                                                                                                     |
|                                                                                                                              |             |                            |                                                                                               |                                |                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |

| DRILLING LOG (Cont Sheet)  |              | SIGN TOP OF HOLE             |                                                   | Hole No.                     |                                | SH-37                                                                                     |         |
|----------------------------|--------------|------------------------------|---------------------------------------------------|------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|---------|
| PROJECT<br>Savannah Harbor |              | INSTALLATION<br>Savannah, GA |                                                   | SHEET<br>OF 2 SHEETS         |                                | 2                                                                                         |         |
| ELEVATION<br>a             | DEPTH<br>30' | LEGEND<br>c                  | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |         |
| -31.5                      |              |                              | CH - Gray fat stiff clay                          |                              |                                |                                                                                           | BLOWS   |
|                            |              |                              | SM - Greenish gray fine<br>silty sand             |                              | 6                              |                                                                                           | 11      |
| -34.5                      | 35'          |                              | SP - Light tan poorly graded<br>sand              |                              | 7                              |                                                                                           | 30      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 39      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 40      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 50      |
| -41.5                      | 40'          |                              | SM - Green fine cemented<br>silty sand, very hard |                              |                                |                                                                                           | 54      |
|                            |              |                              |                                                   |                              | 8                              |                                                                                           | 51      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 63      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 100/0.9 |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 97      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 80      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 100/0.8 |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 81      |
|                            |              |                              |                                                   |                              |                                |                                                                                           | 79      |
| -55.5                      | 55'          |                              |                                                   |                              |                                |                                                                                           | 68      |
|                            |              |                              | Bottom of hole -55.5' MLW                         |                              |                                |                                                                                           | 71      |

| DRILLING LOG                                                                                                                 |       |        |                                               | DIVISION                  |                         | INSTALLATION                                                                                        |  | Hole No. SH-39                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------------------------------------------|---------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |        |                                               | South Atlantic            |                         | Savannah, GA                                                                                        |  | SHEET 1<br>OF 2 SHEETS                       |  |
| 2. LOCATION (Coordinates or Station)<br>Sta 62+000N R= "23" (X-846495 Y-758660)                                              |       |        |                                               |                           |                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                                                       |  |                                              |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |        |                                               |                           |                         | 11. DAYUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                   |  |                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-39                                                             |       |        |                                               |                           |                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague and Henwood                                      |  |                                              |  |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |       |        |                                               |                           |                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                          |  | DISTURBED<br>8<br>UNDISTURBED<br>0           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |        |                                               |                           |                         | 14. TOTAL NUMBER CORE BOXES                                                                         |  |                                              |  |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |       |        |                                               |                           |                         | 15. ELEVATION GROUND WATER                                                                          |  |                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |        |                                               |                           |                         | 16. DATE HOLE                                                                                       |  | STARTED<br>5 Nov 77<br>COMPLETED<br>5 Nov 77 |  |
| 9. TOTAL DEPTH OF HOLE<br>-55.5' MLW                                                                                         |       |        |                                               |                           |                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                                |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                                             |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                                    |  |                                              |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)  | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |  |                                              |  |
| 0.0 MLW                                                                                                                      | 0.0   | c      |                                               |                           |                         |                                                                                                     |  |                                              |  |
|                                                                                                                              | 5.1   |        | Water                                         |                           |                         |                                                                                                     |  |                                              |  |
|                                                                                                                              |       |        | Bottom of river -5.5'                         |                           | JAR                     | BLOWS                                                                                               |  |                                              |  |
| -5.5                                                                                                                         |       |        | SM - Greenish gray and tan<br>silty fine sand |                           | 1                       | 12                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 14                                                                                                  |  |                                              |  |
| -9.5                                                                                                                         | 10'   |        | MH - Gray fat clayey silt<br>with sand layers |                           | 2                       | 12                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 11                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 10                                                                                                  |  |                                              |  |
| -13.5                                                                                                                        | 15'   |        | SM - Gray fine and medium<br>silty sand       |                           | 3                       | 11                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 12                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        | With some soft silt                           |                           |                         | 24                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 21                                                                                                  |  |                                              |  |
|                                                                                                                              | 20'   |        | Gray and tan fine and<br>medium sand          |                           | 4                       | 31                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 36                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 35                                                                                                  |  |                                              |  |
|                                                                                                                              | 25'   |        |                                               |                           |                         | 36                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        | Greenish gray and tan                         |                           |                         | 34                                                                                                  |  |                                              |  |
|                                                                                                                              |       |        |                                               |                           |                         | 39                                                                                                  |  |                                              |  |
| -30.0                                                                                                                        | 30'   |        | Continued on sheet 2                          |                           |                         | 36                                                                                                  |  |                                              |  |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                                |       |        |                                               |                           |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |  |                                              |  |

| BILLING LOG (Cont Sheet) |       | LOCATION TOP OF HOLE |                                              | Hole No.                |                                |                                                                                      |
|--------------------------|-------|----------------------|----------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT                  |       | INSTALLATION         |                                              | SHEET 2                 |                                |                                                                                      |
| Savannah Harbor          |       | Savannah, GA         |                                              | OF 3 SHEETS             |                                |                                                                                      |
| LEVATION                 | DEPTH | LEGEND               | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| 30.0                     | 30'   | c                    | d                                            | e                       | f                              | g                                                                                    |
|                          |       |                      |                                              |                         |                                | BLOWS                                                                                |
|                          |       |                      | SP-Tan poorly graded sand                    |                         |                                | 34                                                                                   |
|                          |       |                      |                                              |                         | 5                              | 40                                                                                   |
|                          |       |                      |                                              |                         |                                | 28                                                                                   |
|                          | 35'   |                      |                                              |                         |                                | 29                                                                                   |
|                          |       |                      |                                              |                         |                                | 21                                                                                   |
|                          |       |                      |                                              |                         |                                | 38                                                                                   |
|                          | 40'   |                      | With some gravel                             |                         |                                | 51                                                                                   |
| -41.5                    |       |                      |                                              |                         |                                | 60                                                                                   |
|                          |       |                      | SM - Dark green fine cemented<br>silty sand  |                         | 6                              | 87                                                                                   |
|                          | 45'   |                      |                                              |                         |                                | 90                                                                                   |
|                          |       |                      |                                              |                         |                                | 100/0.9                                                                              |
|                          |       |                      |                                              |                         |                                | 00                                                                                   |
|                          | 50'   |                      |                                              |                         | 7                              | 75                                                                                   |
|                          |       |                      |                                              |                         |                                | 80                                                                                   |
|                          |       |                      |                                              |                         | ..                             | 82                                                                                   |
| -55.0                    | 55'   |                      | Bottom of hole -55.0' MLW                    |                         | 8                              | 79                                                                                   |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                              | INSTALLATION<br>Savannah, GA                                                                  |                         | Hole No. SH-40<br>SHEET 1<br>OF 2 SHEETS                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |                            |                                              | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon                                              |                         |                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>Sta 61+000N, R= "22" (X-847350 Y-758840)                                             |       |                            |                                              | 11. DATUM FOR ELEVATION SHOWN (FSM or MLLW)<br>MLW                                            |                         |                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                             |                         |                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-40                                                             |       |                            |                                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN<br>DISTURBED 7 UNDISTURBED 0                   |                         |                                                                                      |  |
| 5. NAME OF DRILLER<br>Perry Rountree                                                                                         |       |                            |                                              | 14. TOTAL NUMBER CORE BOXES                                                                   |                         |                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                              | 15. ELEVATION GROUND WATER                                                                    |                         |                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>56.0'                                                                                          |       |                            |                                              | 16. DATE HOLE<br>STARTED 6 Nov 77 COMPLETED 6 Nov 77                                          |                         |                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                              | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                          |                         |                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW                                                                                         |       |                            |                                              | 18. TOTAL CORE RECOVERY FOR BORING                                                            |                         |                                                                                      |  |
|                                                                                                                              |       |                            |                                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                              |                         |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVER-<br>ERY                                                                     | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| 0.0 MLW                                                                                                                      | 0'    | c                          | d                                            | e                                                                                             | f                       | g                                                                                    |  |
|                                                                                                                              | 5'    |                            |                                              |                                                                                               |                         |                                                                                      |  |
|                                                                                                                              | 10'   |                            |                                              |                                                                                               |                         |                                                                                      |  |
| -14.0                                                                                                                        | 15'   |                            | Bottom of river -14.0'                       |                                                                                               | JAR                     | BLOWS                                                                                |  |
|                                                                                                                              |       |                            | OH - Gray soft organic clayey silt           |                                                                                               | 1                       | 1                                                                                    |  |
|                                                                                                                              |       |                            |                                              |                                                                                               |                         | 1                                                                                    |  |
|                                                                                                                              |       |                            |                                              |                                                                                               |                         | 0                                                                                    |  |
| -20.5                                                                                                                        | 20'   |                            | SM - Gray and tan silty fine and medium sand |                                                                                               | 2                       | 1                                                                                    |  |
|                                                                                                                              |       |                            |                                              |                                                                                               | 3                       | 3                                                                                    |  |
|                                                                                                                              |       |                            |                                              |                                                                                               |                         | 10                                                                                   |  |
|                                                                                                                              | 25'   |                            |                                              |                                                                                               |                         | 14                                                                                   |  |
|                                                                                                                              |       |                            |                                              |                                                                                               |                         | 25                                                                                   |  |
| -28.0                                                                                                                        |       |                            | SP - Tan poorly graded sand                  |                                                                                               |                         | 30                                                                                   |  |
| -30.0                                                                                                                        | 30'   |                            | Continued on sheet 2                         |                                                                                               | 4                       | 46                                                                                   |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                                      |       |                            |                                              | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30" |                         |                                                                                      |  |



| DRILLING LOG (Cont Sheet) |       | LOCATION TOP OF HOLE |                                              | Hole No. SH-40          |                                |                                                                                      |
|---------------------------|-------|----------------------|----------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION         |                                              | SHEET 2 OF 2 SHEETS     |                                |                                                                                      |
| Savannah Harbor           |       | Savannah, GA         |                                              |                         |                                |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND               | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                         | 30'   | c                    | d                                            | e                       |                                | g                                                                                    |
|                           |       |                      | SP - Tan poorly graded sand                  |                         | 5                              | BLOWS                                                                                |
|                           |       |                      |                                              |                         |                                | 54                                                                                   |
|                           |       |                      |                                              |                         |                                | 49                                                                                   |
|                           |       |                      |                                              |                         |                                | 51                                                                                   |
|                           | 35'   |                      |                                              |                         |                                | 54                                                                                   |
|                           |       |                      |                                              |                         |                                | 31                                                                                   |
|                           |       |                      |                                              |                         |                                | 29                                                                                   |
|                           | 40'   |                      |                                              |                         |                                | 33                                                                                   |
| -41.0                     |       |                      |                                              |                         |                                | 58                                                                                   |
|                           |       |                      | SM - Green fine cemented<br>silty sand       |                         | 6                              | 78                                                                                   |
|                           | 45'   |                      |                                              |                         |                                | 89                                                                                   |
|                           |       |                      |                                              |                         |                                | 98                                                                                   |
|                           |       |                      |                                              |                         |                                | 9                                                                                    |
|                           |       |                      |                                              |                         |                                | 100/0.5                                                                              |
|                           | 50'   |                      |                                              |                         | 7                              | 93                                                                                   |
|                           |       |                      |                                              |                         |                                | 100/0.6                                                                              |
|                           |       |                      |                                              |                         |                                | 92                                                                                   |
|                           | 55'   |                      |                                              |                         |                                | 85                                                                                   |
| -56.0                     |       |                      | Bottom of hole -56.0 MLW                     |                         |                                | 91                                                                                   |

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic |                                                                                         | INSTALLATION<br>Savannah, GA                                                                        |                              | Hole No. SH-41<br>SHEET 1<br>OF 2 SHEETS                                                  |       |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |             |                            |                                                                                         | 10. SIZE AND TYPE OF BIT 3/8" ID splitspoon                                                         |                              |                                                                                           |       |
| 2. LOCATION (Coordinates or Station)<br>Sta 54+00GW, R = "24"                                                                |             |                            |                                                                                         | 11. DATUM FOR ELEVATION INCH (TBM or BBL)<br>MLW                                                    |                              |                                                                                           |       |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                                   |                              |                                                                                           |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-41                                                             |             |                            |                                                                                         | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                                           |                              | DISTURBED<br>7                                                                            |       |
| 5. NAME OF DRILLER<br>A. L. Padgett                                                                                          |             |                            |                                                                                         | 14. TOTAL NUMBER CORE BOXES                                                                         |                              | UNDISTURBED<br>0                                                                          |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                         | 15. ELEVATION GROUND WATER                                                                          |                              |                                                                                           |       |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |             |                            |                                                                                         | 16. DATE HOLE STARTED<br>29 Nov 77                                                                  |                              |                                                                                           |       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                                                |                              |                                                                                           |       |
| 9. TOTAL DEPTH OF HOLE<br>-55.0' MLW                                                                                         |             |                            |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>1                                                             |                              |                                                                                           |       |
|                                                                                                                              |             |                            |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                                    |                              |                                                                                           |       |
| ELEVATION<br>0.0 MLW                                                                                                         | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e                                                                             | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |       |
|                                                                                                                              | 5'          |                            | Water                                                                                   |                                                                                                     |                              |                                                                                           |       |
|                                                                                                                              | 10'         |                            |                                                                                         |                                                                                                     |                              |                                                                                           |       |
|                                                                                                                              | 15'         |                            |                                                                                         |                                                                                                     |                              |                                                                                           |       |
| -19.0                                                                                                                        | 20'         |                            | Bottom of river -19.0'                                                                  |                                                                                                     | JAR                          |                                                                                           | BLOWS |
|                                                                                                                              |             |                            | OH - Gray soft fat clayey organic silt                                                  |                                                                                                     | 1                            |                                                                                           | 0     |
| -21.5                                                                                                                        |             |                            | SM - Greenish gray silty fine sand interbedded with soft silt layers                    |                                                                                                     | 2                            |                                                                                           | 4     |
|                                                                                                                              | 25'         |                            |                                                                                         |                                                                                                     |                              |                                                                                           | 7     |
| -26.0                                                                                                                        |             |                            | SP - Gray poorly graded sand                                                            |                                                                                                     |                              |                                                                                           | 21    |
|                                                                                                                              |             |                            |                                                                                         |                                                                                                     |                              |                                                                                           | 36    |
|                                                                                                                              | 30'         |                            | Continued on sheet 2                                                                    |                                                                                                     | 3                            |                                                                                           | 30    |
| -30.0                                                                                                                        |             |                            | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                                                                     |                              |                                                                                           | 41    |
|                                                                                                                              |             |                            |                                                                                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falline 30" |                              |                                                                                           |       |

| DRILLING LOG (Cont Sheet) |              | 0.0 MLW                   |                                                                | Hole No. SH-41               |                                |                                                                                           |       |
|---------------------------|--------------|---------------------------|----------------------------------------------------------------|------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|-------|
| PROJECT Savannah Harbor   |              | INSTALLATION Savannah, GA |                                                                | SHEET 2 OF 2 SHEETS          |                                |                                                                                           |       |
| ELEVATION<br>a            | DEPTH<br>30' | LEGEND<br>c               | CLASSIFICATION OF MATERIALS<br>(Description)<br>d              | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f | BLOWS |
| -34.5                     | 35'          |                           | SP - Gray poorly graded sand                                   |                              |                                |                                                                                           | 56    |
|                           |              |                           | With some large size gravel                                    |                              |                                |                                                                                           | 39    |
|                           |              |                           | SM - Dark green very fine<br>cemented silty sand, very<br>hard |                              | 4                              | 100/0.6                                                                                   |       |
|                           |              |                           |                                                                |                              |                                | 100                                                                                       |       |
| -40.5                     | 40'          |                           | SM - Dark green very fine<br>cemented silty sand, very<br>hard |                              | 5                              | 100/0.7                                                                                   |       |
|                           |              |                           |                                                                |                              |                                | 94                                                                                        |       |
|                           |              |                           |                                                                |                              |                                | 99                                                                                        |       |
|                           |              |                           |                                                                |                              |                                | 90                                                                                        |       |
| -45.5                     | 45'          |                           | SM - Dark green very fine<br>cemented silty sand, very<br>hard |                              | 6                              | 100/0.4                                                                                   |       |
|                           |              |                           |                                                                |                              |                                | 94                                                                                        |       |
|                           |              |                           |                                                                |                              |                                | 82                                                                                        |       |
|                           |              |                           |                                                                |                              |                                | 88                                                                                        |       |
| -50.5                     | 50'          |                           | MH - Dark green hard fine<br>sandy and clayey silt             |                              | 7                              |                                                                                           | 83    |
| -55.0                     | 55'          |                           | Bottom of hole -55.0'                                          |                              |                                |                                                                                           |       |

| DRILLING LOG                            |             | DIVISION<br>South Atlantic                                                                                                   |                                                                                               | INSTALLATION<br>Savannah, GA                       |                              | Hole No. SH-42                                                                                      |       |
|-----------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>Savannah Harbor           |             | 2. LOCATION (Coordinates or Station)<br>Sta 53+000W, R= "21"                                                                 |                                                                                               | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon      |                              | SHEET 1<br>OF 2 SHEETS                                                                              |       |
| 3. DRILLING AGENCY<br>Savannah District |             | 4. HOLE NO. (As shown on drawing title and file number)<br>SH-42                                                             |                                                                                               | 11. DAY/IN FOR ELEVATION SHOWN (FSM or SPM)<br>MLW |                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                                   |       |
| 5. NAME OF DRILLER<br>Perry Rountree    |             | 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                               | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN     |                              | 14. TOTAL NUMBER CORE BOXES                                                                         |       |
| 7. THICKNESS OF OVERBURDEN<br>56.0'     |             | 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |                                                                                               | 15. ELEVATION GROUND WATER                         |                              | 16. DATE HOLE<br>STARTED 30 Nov 77 COMPLETED 30 Nov 77                                              |       |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW    |             | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                                                                                        |                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING                 |                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                                    |       |
| ELEVATION<br>0.0.                       | DEPTH<br>0' | LEGEND<br>c                                                                                                                  | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | SCORE<br>RECOVERY<br>e                             | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |       |
|                                         | 5'          |                                                                                                                              | Water                                                                                         |                                                    |                              |                                                                                                     |       |
|                                         | 10'         |                                                                                                                              |                                                                                               |                                                    |                              |                                                                                                     |       |
|                                         | 15'         |                                                                                                                              |                                                                                               |                                                    |                              |                                                                                                     |       |
|                                         | 20'         |                                                                                                                              |                                                                                               |                                                    |                              |                                                                                                     |       |
| -21.5                                   | 21.5'       |                                                                                                                              | Bottom of river -21.5'                                                                        |                                                    | TAR                          |                                                                                                     | BLOWS |
|                                         | 22.5'       |                                                                                                                              | OH - Gray soft clayey<br>organic silt                                                         |                                                    | 1                            |                                                                                                     | 0     |
| -24.5                                   | 24.5'       |                                                                                                                              | SP-SM - Gray fine poorly<br>graded and silty sand                                             |                                                    |                              |                                                                                                     | 3     |
|                                         | 25.5'       |                                                                                                                              |                                                                                               |                                                    |                              |                                                                                                     | 6     |
|                                         | 26.5'       |                                                                                                                              |                                                                                               |                                                    | 2                            |                                                                                                     | 19    |
| -30.0                                   | 30'         |                                                                                                                              | Continued on sheet 2                                                                          |                                                    |                              |                                                                                                     |       |
|                                         |             |                                                                                                                              | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. | B-35                                               |                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30' |       |

| DRILLING LOG (Cont Sheet)  |            | LOCATION TOP OF HOLE                    |                                                    | Hole No.                        |                                |                                                                                         |
|----------------------------|------------|-----------------------------------------|----------------------------------------------------|---------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor |            | 0.0 MLW<br>INSTALLATION<br>Savannah, GA |                                                    | SR-42<br>SHEET 2<br>OF 2 SHEETS |                                |                                                                                         |
| ELEVATION<br>a             | DEPTH<br>b | LEGEND<br>c                             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d  | % CORE<br>RECOV-<br>ERY<br>e    | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>unboring, etc., if significant)<br>f |
|                            | 30'        |                                         |                                                    |                                 |                                | 27                                                                                      |
|                            |            |                                         | SP-SM - Gray fine poorly<br>graded and silty sand  |                                 | 3                              | 41                                                                                      |
|                            | 35'        |                                         |                                                    |                                 |                                | 30                                                                                      |
|                            |            |                                         |                                                    |                                 |                                | 21                                                                                      |
| -36.0                      |            |                                         | SM - Green fine cemented<br>silty sand, very hard  |                                 | 4                              | 63                                                                                      |
|                            | 40'        |                                         |                                                    |                                 |                                | 100                                                                                     |
|                            |            |                                         |                                                    |                                 |                                | 96                                                                                      |
|                            | 45'        |                                         |                                                    |                                 | 5                              | 100/0.9                                                                                 |
|                            |            |                                         |                                                    |                                 |                                | 100/0.7                                                                                 |
|                            |            |                                         |                                                    |                                 |                                | 99                                                                                      |
|                            |            |                                         |                                                    |                                 |                                | 100/0.4                                                                                 |
|                            |            |                                         |                                                    |                                 |                                | 100                                                                                     |
| -48.5                      | 50'        |                                         | MH - Dark green hard clayey<br>and fine sandy silt |                                 | 6                              | 93                                                                                      |
|                            |            |                                         |                                                    |                                 |                                | 90                                                                                      |
|                            |            |                                         |                                                    |                                 |                                | 87                                                                                      |
|                            |            |                                         |                                                    |                                 |                                | 91                                                                                      |
|                            | 55'        |                                         |                                                    |                                 |                                | 83                                                                                      |
| -56.0                      |            |                                         | Bottom of hole -56.0' MLW                          |                                 |                                | 80                                                                                      |

| DRILLING LOG                                                                                                                 |             | Division<br>Sout. Atlantic |                                                                                           | INSTALLATION<br>Savannah, GA                                 |                              | Hole No. SH-76                                                                                                                                                                                                                       |  | SHEET 1<br>OF 1 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| 1. PROJECT<br>Savannah Harbor Comprehensive Study                                                                            |             |                            |                                                                                           | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon, 4"            |                              |                                                                                                                                                                                                                                      |  |                        |  |
| 2. LOCATION (Coordinates or Station) X-841175, Y-757919<br>See Plans (off-set 19.0' down stream)                             |             |                            |                                                                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Fishtail          |                              |                                                                                                                                                                                                                                      |  |                        |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                                                                                                                                                                      |  |                        |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-76                                                                |             |                            |                                                                                           | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN               |                              | DISTURBED                                                                                                                                                                                                                            |  | UNDISTURBED            |  |
| 5. NAME OF DRILLER<br>T. Scott                                                                                               |             |                            |                                                                                           | 14. TOTAL NUMBER CORE BOXES                                  |                              |                                                                                                                                                                                                                                      |  |                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                           | 15. ELEVATION GROUND WATER                                   |                              |                                                                                                                                                                                                                                      |  |                        |  |
| 7. THICKNESS OF OVERBURDEN 59.5' +                                                                                           |             |                            |                                                                                           | 16. DATE HOLE                                                |                              | STARTED                                                                                                                                                                                                                              |  | COMPLETED              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                           | 28 Sep 82                                                    |                              | 28 Sep 82                                                                                                                                                                                                                            |  |                        |  |
| 9. TOTAL DEPTH OF HOLE 59.5'                                                                                                 |             |                            |                                                                                           | 17. ELEVATION TOP OF HOLE 0.0' MLW                           |                              |                                                                                                                                                                                                                                      |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           | 18. TOTAL CORE RECOVERY FOR BORING                           |                              |                                                                                                                                                                                                                                      |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist           |                              |                                                                                                                                                                                                                                      |  |                        |  |
| ELEVATION<br>MLW 0.0'                                                                                                        | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                         | % CORE<br>RECOVER-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                                            |  |                        |  |
|                                                                                                                              | 35          |                            | Water                                                                                     |                                                              |                              |                                                                                                                                                                                                                                      |  |                        |  |
|                                                                                                                              |             |                            | Bottom of Harbor 36.8'                                                                    |                                                              | JAR                          | Note: Change of scale<br>at 35.0'                                                                                                                                                                                                    |  |                        |  |
| -36.8'                                                                                                                       |             |                            | MH-Gray fat silt with some<br>fine to coarse sand.<br>(See Remarks)                       |                                                              | 1                            | Blows                                                                                                                                                                                                                                |  |                        |  |
| -40.0'                                                                                                                       | 40          |                            | SM-Gray fine to medium silty<br>sand with some mica                                       |                                                              | 2                            | Note: Weight of rods<br>drove splitspoon from<br>36.8' to 38.4' and to<br>40.0' with hammer.<br>Three foot drives<br>taken to retain<br>samples. Set casing<br>to 39.4'.<br>43.0' -46.0' poor<br>recovery. Reset casing<br>to 48.7'. |  |                        |  |
| -43.0'                                                                                                                       |             |                            | SP-Light grayish tan coarse<br>poorly graded sand with<br>trace of fine gravel            |                                                              | 3                            | 10                                                                                                                                                                                                                                   |  |                        |  |
| -46.0                                                                                                                        | 45          |                            | No Recovery                                                                               |                                                              |                              | 11                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           |                                                              |                              | 12                                                                                                                                                                                                                                   |  |                        |  |
| -52.0'                                                                                                                       | 50          |                            |                                                                                           |                                                              |                              | 14                                                                                                                                                                                                                                   |  |                        |  |
| -53.5'                                                                                                                       |             |                            | SP-Tan coarse poorly graded<br>sand with trace of fine<br>gravel                          |                                                              | 4                            | 30                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            | SM-Green coarse silty<br>sand                                                             |                                                              | 5                            | 42                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              | 55          |                            | Green fine silty sand with<br>some mica                                                   |                                                              | 6                            | 24                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           |                                                              | 7                            | 74                                                                                                                                                                                                                                   |  |                        |  |
| -59.5'                                                                                                                       | 60          |                            | Bottom of Boring 59.5'                                                                    |                                                              |                              | 23                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            | Note: Soils field classified<br>in accordance with Unified<br>Soil Classification System. |                                                              |                              | 25                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           |                                                              |                              | 37                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           |                                                              |                              | 37                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           |                                                              |                              | 39                                                                                                                                                                                                                                   |  |                        |  |
|                                                                                                                              |             |                            |                                                                                           |                                                              |                              | Blows Per Foot:<br>Number required to drive<br>1 3/8" ID splitspoon<br>w/140 lb. hammer falling<br>30".                                                                                                                              |  |                        |  |

Note No. SH-11

| DRILLING LOG                                                                                                              |            | DIVISION<br>South Atlantic |                                                                                                                   | INSTALLATION<br>Savannah, GA                                            |                              | SHEET<br>OF 2 SHEETS                                                                           |  |
|---------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------|--|
| PROJECT<br>Savannah Harbor Comprehensive Study                                                                            |            |                            |                                                                                                                   | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 4'                        |                              |                                                                                                |  |
| LOCATION (Coordinate or Station) X-851751, Y-760687                                                                       |            |                            |                                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL)<br>MLW Fishtail, 4x5 1/2 BBL |                              |                                                                                                |  |
| Plans (off-set 9.0' U/S, 7.0' toward chnl)                                                                                |            |                            |                                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood            |                              |                                                                                                |  |
| DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                                                   | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                          |                              |                                                                                                |  |
| HOLE NO. (As shown on drawing title<br>and file number) SH-77                                                             |            |                            |                                                                                                                   | DISTURBED                                                               |                              | UNDISTURBED                                                                                    |  |
| NAME OF DRILLER<br>T. Scott                                                                                               |            |                            |                                                                                                                   | 14. TOTAL NUMBER CORE BOXES                                             |                              |                                                                                                |  |
| DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                                   | 15. ELEVATION GROUND WATER                                              |                              |                                                                                                |  |
| THICKNESS OF OVERBURDEN 60.0'+                                                                                            |            |                            |                                                                                                                   | 16. DATE HOLE STARTED 29 Sep 82 COMPLETED 30 Sep 82                     |                              |                                                                                                |  |
| DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                                   | 17. ELEVATION TOP OF HOLE 0.0'                                          |                              |                                                                                                |  |
| TOTAL DEPTH OF HOLE 60.0'                                                                                                 |            |                            |                                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING                                      |                              |                                                                                                |  |
|                                                                                                                           |            |                            |                                                                                                                   | 19. SIGNATURE OF INSPECTOR<br>J. Arthur, Geologist                      |                              |                                                                                                |  |
| ELEVATION<br>MLW                                                                                                          | DEPTH<br>b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                 | % CORE<br>RECOV-<br>ERY<br>e                                            | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g      |  |
| -19.0'                                                                                                                    | 20         |                            | Water<br>Bottom of Harbor: 19.0'                                                                                  |                                                                         | JAR                          | Note: Scale change at 20.0'. Blows                                                             |  |
|                                                                                                                           | 25         |                            | MH-Grayish green fat silt with some fine to coarse sand.                                                          |                                                                         | 1                            | Note: 19.0' to 29.5' weight of hammer drove splitspoon.                                        |  |
|                                                                                                                           | 30         |                            | SM-Grayish green medium to coarse silty sand with trace of fine gravel                                            |                                                                         | 2                            | 100/0.9'                                                                                       |  |
|                                                                                                                           | 35         |                            | Green fine silty sand with some mica                                                                              |                                                                         | 3                            | Note: 37.5' to 38.0' and 39.1' to 39.5' /0.5' in inadvertently cleaned hole.                   |  |
|                                                                                                                           | 40         |                            | With some thin sand lenses                                                                                        |                                                                         | 4                            | 100/0.5'                                                                                       |  |
|                                                                                                                           | 45         |                            | No Recovery                                                                                                       |                                                                         | 5                            | 100/0.6'                                                                                       |  |
|                                                                                                                           | 50         |                            | Continued on Sheet # 2<br>Note: Soils field classified in accordance with the Unified Soil Classification System. |                                                                         | 6                            | Pull 1 44.0' to 51.0'<br>Run 7.0' Rec 0.0'<br>C.L. 7.0'                                        |  |
|                                                                                                                           |            |                            |                                                                                                                   |                                                                         |                              | Blows Per Foot:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30". |  |

| DRILLING LOG (Cont Sheet)           |       | ELEVATION TOP OF HOLE |                                                                     | Hole No. SR-77     |                         |                                                                                      |
|-------------------------------------|-------|-----------------------|---------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                             |       | INSTALLATION          |                                                                     | SHEET              |                         |                                                                                      |
| Savannah Harbor Comprehensive Study |       | Savannah, GA          |                                                                     | OF 2 SHEETS        |                         |                                                                                      |
| ELEVATION                           | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                        | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                                   | b     | c                     | d                                                                   | e                  | f                       | g                                                                                    |
| -51.0'                              |       |                       | No Recovery (Continued)                                             |                    |                         | Pull 1 (Continued)                                                                   |
|                                     |       |                       | SM-Green fine silty sand<br>with some mica and thin sand<br>lenses. |                    | 7                       | 60                                                                                   |
|                                     |       |                       |                                                                     |                    |                         | 56                                                                                   |
|                                     |       |                       |                                                                     |                    | 8                       | 100/0.8                                                                              |
|                                     |       |                       |                                                                     |                    |                         | 59                                                                                   |
|                                     |       |                       |                                                                     |                    |                         | 40                                                                                   |
| -60.0'                              |       |                       |                                                                     |                    | 9                       | 37                                                                                   |
|                                     |       |                       | Bottom of Hole: 60.0'                                               |                    |                         |                                                                                      |



Hole No. SH-154

| DRILLING LOG                                                                                                                 |       | DIVISION SOUTH ATLANTIC |                                                                        | INSTALLATION SAVANNAH, GA.                                                                        |                   | SHEET 1 OF 2 SHEETS                                                                        |       |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                         |                                                                        | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5/8" fishtail, 5/8" roller rock bit                  |                   |                                                                                            |       |
| 2. LOCATION (Coordinates or Station)<br>X=850000 Y=759179 GA. EAST                                                           |       |                         |                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                   |                                                                                            |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                         |                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                            |                   |                                                                                            |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-154                                                            |       |                         |                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 11 : 0 : 0                                           |                   |                                                                                            |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                         |                                                                        | 14. TOTAL NUMBER CORE BOXES 0                                                                     |                   |                                                                                            |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                         |                                                                        | 15. ELEVATION GROUND WATER N/A                                                                    |                   |                                                                                            |       |
| 7. THICKNESS OF OVERBURDEN 61.0' (Water 23.5')                                                                               |       |                         |                                                                        | 16. DATE HOLE : STARTED 4 DEC 91 : COMPLETED 4 DEC 91                                             |                   |                                                                                            |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                         |                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                                                                    |                   |                                                                                            |       |
| 9. TOTAL DEPTH OF HOLE 61.0'                                                                                                 |       |                         |                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                            |                   |                                                                                            |       |
|                                                                                                                              |       |                         |                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                   |                                                                                            |       |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                  | CLASSIFICATION OF MATERIALS (Description)                              | % CORE RECOVERY                                                                                   | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)             | BLOWS |
| 0.0                                                                                                                          | 0     |                         |                                                                        |                                                                                                   | VAR               |                                                                                            |       |
|                                                                                                                              | 20    |                         | Water                                                                  |                                                                                                   |                   | Scale change at 20.0'. Set 6" diameter casing by own weight to 27.1'.                      |       |
| -23.5'                                                                                                                       |       |                         | Bottom of Harbor 23.5'                                                 |                                                                                                   |                   |                                                                                            |       |
|                                                                                                                              | 25    |                         | (SM) Gray, medium to coarse silty SAND.<br>Some fine to coarse gravel. |                                                                                                   | 1                 | Used 5/8" roller rock bit from 23.0' to 28.0'. Began using Florigel drilling mud at 26.5'. | 28    |
| -26.5'                                                                                                                       |       |                         | Trace of fine gravel & clay.                                           |                                                                                                   | 2                 | 46.0" reset casing to 37.9'.                                                               | 46    |
| -28.0'                                                                                                                       |       |                         | (SC) Gray, fine to medium, clayey SAND.<br>Trace of fine gravel.       |                                                                                                   | 3                 |                                                                                            | 11    |
|                                                                                                                              | 30    |                         | Thick layers of fat clay from 31.0' to 31.7'.                          |                                                                                                   |                   |                                                                                            | 3     |
| -31.0'                                                                                                                       |       |                         | (SM) Gray, medium to coarse silty SAND.<br>Trace of clay.              |                                                                                                   | 4                 |                                                                                            | 6     |
| -32.5'                                                                                                                       |       |                         | (SP) Grayish-tan, coarse, poorly graded SAND.<br>Trace of silt.        |                                                                                                   | 5                 |                                                                                            | 9     |
|                                                                                                                              | 35    |                         | Medium to coarse sand, trace of fine gravel.                           |                                                                                                   |                   |                                                                                            | 25    |
| -35.5'                                                                                                                       |       |                         | No gravel.                                                             |                                                                                                   | 6                 |                                                                                            | 33    |
|                                                                                                                              | 40    |                         | (CL) Olive-gray, silty lean CLAY, some fine sand.                      |                                                                                                   | 7                 |                                                                                            | 31    |
| -38.5'                                                                                                                       |       |                         | Trace of fine sand                                                     |                                                                                                   |                   |                                                                                            | 24    |
| -43.0'                                                                                                                       |       |                         |                                                                        |                                                                                                   |                   |                                                                                            | 28    |
|                                                                                                                              | 45    |                         |                                                                        |                                                                                                   |                   |                                                                                            | 20    |
| -46.0'                                                                                                                       |       |                         |                                                                        |                                                                                                   |                   |                                                                                            | 34    |
| -47.5'                                                                                                                       |       |                         |                                                                        |                                                                                                   |                   |                                                                                            | 36    |
| -50.0'                                                                                                                       |       |                         |                                                                        |                                                                                                   |                   |                                                                                            | 33    |
|                                                                                                                              | 50    |                         |                                                                        |                                                                                                   |                   |                                                                                            | 42    |
|                                                                                                                              |       |                         | Continued on sheet #2                                                  |                                                                                                   |                   |                                                                                            | 24    |
|                                                                                                                              |       |                         |                                                                        |                                                                                                   |                   |                                                                                            | 28    |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification                                     |       |                         |                                                                        | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30". |                   |                                                                                            |       |

| DRILLING LOG (Cont Sheet)            |                  |                                                                                   | ELEVATION TOP OF HOLE<br>0.0' MLW                         |                         | Hole No. SH-154                |                                                                                            |
|--------------------------------------|------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |                  |                                                                                   | INSTALLATION<br>SAVANNAH, GA.                             |                         | SHEET 2<br>OF 2 SHEETS         |                                                                                            |
| ELEVATION<br>-50.0'<br>a             | DEPTH<br>50<br>b | LEGEND<br>c                                                                       | CLASSIFICATION OF MATERIALS<br>(Describe)<br>d            | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>J&R | REMARKS<br>(Drilling fluid, water loss, depth of<br>weathering, etc., if significant)<br>f |
| -50.5'                               |                  |  | (CL) Olive-grey, silty, lean CLAY. Trace of<br>fine sand. |                         | 8                              |                                                                                            |
| -53.5'                               |                  |                                                                                   | Dark olive-grey to grey.                                  |                         |                                |                                                                                            |
|                                      | 55               |                                                                                   | (CH) Dark olive-grey to grey, fat CLAY.<br>Trace of silt. |                         | 9                              |                                                                                            |
| -56.5'                               |                  |                                                                                   |                                                           |                         |                                |                                                                                            |
| -58.0'                               |                  |                                                                                   | Some silt.                                                |                         | 10                             |                                                                                            |
|                                      |                  |                                                                                   | Trace of fine sand.                                       |                         |                                |                                                                                            |
| -61.0'                               | 60               |                                                                                   |                                                           |                         | 11                             |                                                                                            |
|                                      |                  |                                                                                   | Bottom of Boring 61.0'                                    |                         |                                |                                                                                            |

Hole No. **SH-213**

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                                  |                              | SHEET 1<br>OF 1 SHEETS                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                   | 10. SIZE AND TYPE OF BIT $1\frac{1}{2}$ " split spoon, $5\frac{1}{2}$ " fish tail                              |                              |                                                                                             |  |
| 2. LOCATION (Coordinates or Station)<br>X-840114 Y-758249 GA. EAST                                                           |            |                            |                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or NSU)<br>MLW                                                              |                              |                                                                                             |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                                         |                              |                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-213                                                            |            |                            |                                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                     |                              | DISTURBED<br>6<br>UNDISTURBED<br>0                                                          |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                               |                              |                                                                                             |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                   | 15. ELEVATION GROUND WATER<br>N/A                                                                              |                              |                                                                                             |  |
| 7. THICKNESS OF OVERBURDEN 62.3' (WATER 41.7')                                                                               |            |                            |                                                                                   | 16. DATE HOLE                                                                                                  |                              | STARTED<br>20 MAR 92<br>COMPLETED<br>20 MAR 92                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                              |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                   |  |
| 9. TOTAL DEPTH OF HOLE 62.3'                                                                                                 |            |                            |                                                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                               |                              |                                                                                             |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                 | % CORE<br>RECOVERY<br>JAR                                                                                      | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g   |  |
|                                                                                                                              |            |                            | Water                                                                             |                                                                                                                |                              | Scale change of 40.0'.<br>Set 6" diameter casing by own<br>weight to 50.4'.                 |  |
|                                                                                                                              | 35         |                            |                                                                                   |                                                                                                                |                              |                                                                                             |  |
|                                                                                                                              | 40         |                            | Bottom of Harbor 41.7'                                                            |                                                                                                                |                              |                                                                                             |  |
| -41.7'                                                                                                                       |            |                            | (CH) Very dark gray to black fat CLAY.                                            |                                                                                                                | 1                            | Weight of rods drove split spoon<br>from 41.7' to 46.0' and again from<br>46.0' to 50.3'. 0 |  |
| -46.0'                                                                                                                       | 45         |                            | Trace of fine to medium sand.                                                     |                                                                                                                | 2                            | 0                                                                                           |  |
| -50.3'                                                                                                                       | 50         |                            | (SP) Greyish brown coarse poorly graded SAND,<br>some fine gravel, trace of clay. |                                                                                                                | 3                            | 30                                                                                          |  |
| -51.8'                                                                                                                       |            |                            | (SC) Olive fine clayey SAND, trace of sil.                                        |                                                                                                                | 4                            | 36                                                                                          |  |
| -54.8'                                                                                                                       | 55         |                            | Some sil.                                                                         |                                                                                                                | 5                            | 37                                                                                          |  |
|                                                                                                                              | 60         |                            |                                                                                   |                                                                                                                |                              | 34                                                                                          |  |
|                                                                                                                              |            |                            |                                                                                   |                                                                                                                |                              | 26                                                                                          |  |
|                                                                                                                              |            |                            |                                                                                   |                                                                                                                |                              | 23                                                                                          |  |
|                                                                                                                              |            |                            |                                                                                   |                                                                                                                |                              | 28                                                                                          |  |
| -62.3'                                                                                                                       |            |                            | Bottom of Boring 62.3'                                                            |                                                                                                                | 6                            | 45                                                                                          |  |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.                       |            |                            |                                                                                   | BLOWS PER FOOT:<br>Number required to drive $1\frac{1}{2}$ " I.D.<br>split spoon w/140 lb. hammer falling 30". |                              |                                                                                             |  |

| DRILLING LOG                                                                                                                 |            |             | DIVISION<br>SOUTH ATLANTIC                                                                       |                        | Hole No. SH-214                                                                |                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|--------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |             | INSTALLATION<br>SAVANNAH, GA.                                                                    |                        | SHEET 1<br>OF 1 SHEETS                                                         |                                                                                                   |
| 2. LOCATION (Coordinates or Station)<br>X-840594 Y-758106 GA. EAST                                                           |            |             | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 5/8" fishtail                                    |                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                                                                                                   |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                           |                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 2<br>UNDISTURBED : 0 |                                                                                                   |
| 4. HOLE NO. (As shown on drawing title and title number)<br>SH-214                                                           |            |             | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                        | 15. ELEVATION GROUND WATER<br>N/A                                              |                                                                                                   |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |             | 16. DATE HOLE<br>STARTED : 22 MAR 92<br>COMPLETED : 22 MAR 92                                    |                        | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                                                                                                   |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                                                                                   |
| 7. THICKNESS OF OVERBURDEN<br>50.7' (WATER 44.6')                                                                            |            |             | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                        |                                                                                |                                                                                                   |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |             |                                                                                                  |                        |                                                                                |                                                                                                   |
| 9. TOTAL DEPTH OF HOLE<br>50.7'                                                                                              |            |             |                                                                                                  |                        |                                                                                |                                                                                                   |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>s | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                                                | % CORE RECOVERY<br>JAR | BOX OR SAMPLE NO.<br>i                                                         | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>BLOWS        |
|                                                                                                                              | 35         |             | Water                                                                                            |                        |                                                                                | Scale change at 40.0'.<br><br>Set 6" diameter casing by own weight to 46.9'.                      |
|                                                                                                                              | 40         |             |                                                                                                  |                        |                                                                                |                                                                                                   |
|                                                                                                                              | 44.6'      |             | Bottom of Harbor 44.6'                                                                           |                        |                                                                                |                                                                                                   |
|                                                                                                                              | 45         |             | (MH) Very dark grey to black clayey SILT, some fine to coarse sand.                              |                        | 1                                                                              | Weight of rods drove split spoon from 44.6' to 46.2'.<br>0                                        |
|                                                                                                                              | 46.2'      |             | (SP) Dark grey to grey medium to coarse poorly graded SAND, some fine gravel, trace of silt.     |                        | 2                                                                              | Note: Boring terminated at 50.7' due to shipping traffic.<br>20                                   |
|                                                                                                                              | 47.7'      |             | Fine to medium sand, no gravel.                                                                  |                        |                                                                                | 21                                                                                                |
|                                                                                                                              | 49.2'      |             | No recovery.                                                                                     |                        |                                                                                | 21                                                                                                |
|                                                                                                                              | 50         |             | Bottom of Boring 50.7'                                                                           |                        |                                                                                | 30                                                                                                |
|                                                                                                                              | 55         |             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                        |                                                                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |
|                                                                                                                              | 60         |             |                                                                                                  |                        |                                                                                |                                                                                                   |

Hole No. SH-214A

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                            | INSTALLATION<br>SAVANNAH, GA.                                                                     |                   | SHEET 1<br>OF 1 SHEETS                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                            | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 5/8" flange                                       |                   |                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X-840597 Y-758103 GA. EAST                                                           |       |                            |                                                                            | 11. DATUM FOR ELEVATION SHOWN (TBM or WSL)<br>MLW                                                 |                   |                                                                                                                              |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FAILING 314                                            |                   |                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-214A                                                           |       |                            |                                                                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4                                                   |                   | UNDISTURBED<br>0                                                                                                             |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                            | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                   |                                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                            | 15. ELEVATION GROUND WATER<br>N/A                                                                 |                   |                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN<br>59.5' (WATER 43.5')                                                                            |       |                            |                                                                            | 16. DATE HOLE<br>22 MAR 92                                                                        |                   | COMPLETED<br>22 MAR 92                                                                                                       |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                            | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                   |                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE<br>59.5'                                                                                              |       |                            |                                                                            | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                         |                   |                                                                                                                              |  |
|                                                                                                                              |       |                            |                                                                            | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                   |                                                                                                                              |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                               | % CORE RECOVERY<br>JAR                                                                            | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                            |  |
| 0.0                                                                                                                          | 0     |                            |                                                                            |                                                                                                   |                   |                                                                                                                              |  |
| 35                                                                                                                           |       |                            | Water                                                                      |                                                                                                   |                   | Scale change at 40.0'.<br><br>Set 6" diameter casing by own weight to 46.3'.<br><br>Began using Zeagoldrilling mud at 43.5'. |  |
| 40                                                                                                                           |       |                            | Bottom of Harbor 43.5'                                                     |                                                                                                   |                   |                                                                                                                              |  |
| 45                                                                                                                           |       |                            | Wash<br>(See Log "SH-214")                                                 |                                                                                                   |                   | Wash return contained some dark gray clayey silt particles and medium to coarse sand.                                        |  |
| 49.0'                                                                                                                        |       |                            | Bottom of Wash 49.0'                                                       |                                                                                                   |                   |                                                                                                                              |  |
| 50.5'                                                                                                                        |       |                            | (SP) Light grey medium to coarse poorly graded SAND, trace of fine gravel. |                                                                                                   | 1                 |                                                                                                                              |  |
| 52.0'                                                                                                                        |       |                            | Medium sand, trace of silt.                                                |                                                                                                   |                   |                                                                                                                              |  |
| 53.5'                                                                                                                        |       |                            | (SM) Olive-grey fine silty SAND.                                           |                                                                                                   | 2                 |                                                                                                                              |  |
| 55.0'                                                                                                                        |       |                            | Trace of clay.                                                             |                                                                                                   |                   |                                                                                                                              |  |
|                                                                                                                              |       |                            | (SC) Olive-grey fine clayey SAND, some silt.                               |                                                                                                   | 3                 |                                                                                                                              |  |
|                                                                                                                              |       |                            |                                                                            |                                                                                                   | 4                 |                                                                                                                              |  |
| 59.5'                                                                                                                        |       |                            | Bottom of Boring 59.5'                                                     |                                                                                                   |                   |                                                                                                                              |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                            |                                                                            | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |                   |                                                                                                                              |  |

| DRILLING LOG                                                                                                              |       | VISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION VANNAH, GA.                                  |                   | SHEET 1 OF 1 SHEETS                                                                                            |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" SPLITSPOON, 5/8" FISHTAIL |                   |                                                                                                                |  |
| 2. LOCATION (Coordinates or Station) X-841526 Y-758559 GA. EAST                                                           |       |                       |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW            |                   |                                                                                                                |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                       |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314       |                   |                                                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-215                                                            |       |                       |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                   | DISTURBED : 3 UNDISTURBED : 0                                                                                  |  |
| 5. NAME OF DRILLER DOUGLAS LaROCHE                                                                                        |       |                       |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                             |                   |                                                                                                                |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                                                  | 15. ELEVATION GROUND WATER N/A                            |                   |                                                                                                                |  |
| 7. THICKNESS OF OVERBURDEN 60.0'                                                                                          |       |                       |                                                                                                  | 16. DATE HOLE                                             |                   | STARTED 20 NOV 91 COMPLETED 20 NOV 91                                                                          |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                       |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                            |                   |                                                                                                                |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                              |       |                       |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                   |                                                                                                                |  |
|                                                                                                                           |       |                       |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.             |                   |                                                                                                                |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                           | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                 |  |
| 0+0                                                                                                                       | 0     |                       |                                                                                                  |                                                           |                   | BLAWS                                                                                                          |  |
|                                                                                                                           | 40    |                       | Water                                                                                            |                                                           |                   | Scale change at 40.0'.                                                                                         |  |
|                                                                                                                           |       |                       | Bottom of Harbor 43.4'                                                                           |                                                           |                   |                                                                                                                |  |
| -43.4'                                                                                                                    | 45    |                       | (SC) Dark grey, medium grained SAND & CLAY. Saturated, sulfur odor.                              |                                                           | 1                 | Made several attempts of recovery. Changed retention spring. Took double drive. Used "SARAH" wrap to no avail. |  |
| -46.5'                                                                                                                    |       |                       | No recovery. Wash was a whitish tan, medium grained, poorly graded sand.                         |                                                           |                   |                                                                                                                |  |
|                                                                                                                           | 50    |                       |                                                                                                  |                                                           |                   |                                                                                                                |  |
| -52.5'                                                                                                                    |       |                       | (SW) Tan, fine to large grained well graded SAND. Trace of gravel (15%).                         |                                                           | 2                 |                                                                                                                |  |
|                                                                                                                           | 55    |                       |                                                                                                  |                                                           |                   |                                                                                                                |  |
| -58.5'                                                                                                                    |       |                       | (MH) Green, stiff, fat SILT. Trace of sand & mica, moist. Slight organic odor.                   |                                                           | 3                 |                                                                                                                |  |
| -60.0'                                                                                                                    | 60    |                       | Bottom of Boring 60.0'                                                                           |                                                           |                   |                                                                                                                |  |
|                                                                                                                           |       |                       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                   | BLAWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30".               |  |

MOIS NO. 317-210

| DRILLING LOG                                                                                                                 |             | DIVISION <b>SOUTH ATLANTIC</b> |                                                                     | INSTALLATION <b>SAVANNAH, GA.</b>                                             |                               | SHEET 1<br>OF 1 SHEETS                                                                                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                                  |             |                                |                                                                     | 10. SIZE AND TYPE OF BIT <b>1 1/2" SPLITSPOON, 5 1/2" FISHTAIL</b>            |                               |                                                                                                                                                                        |  |
| 1. LOCATION (Coordinates or Station)<br><b>C-843032 Y-758229 GA. EAST</b>                                                    |             |                                |                                                                     | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                      |                               |                                                                                                                                                                        |  |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |             |                                |                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>Falling 314</b>                 |                               |                                                                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>SH-218</b>                                                     |             |                                |                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br><b>6</b>                        |                               | DISTURBED<br><b>0</b><br>UNDISTURBED<br><b>0</b>                                                                                                                       |  |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |             |                                |                                                                     | 14. TOTAL NUMBER CORE BOXES<br><b>0</b>                                       |                               |                                                                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                                |                                                                     | 15. ELEVATION GROUND WATER <b>N/A</b>                                         |                               |                                                                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN <b>50.0' (Water 41.0')</b>                                                                        |             |                                |                                                                     | 16. DATE HOLE<br>STARTED<br><b>16 JAN 92</b><br>COMPLETED<br><b>16 JAN 92</b> |                               |                                                                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK <b>0.0'</b>                                                                                       |             |                                |                                                                     | 17. ELEVATION TOP OF HOLE <b>0.0'</b>                                         |                               |                                                                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE <b>50.0'</b>                                                                                          |             |                                |                                                                     | 18. TOTAL CORE RECOVERY FOR BORING <b>N/A</b>                                 |                               |                                                                                                                                                                        |  |
|                                                                                                                              |             |                                |                                                                     | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>                       |                               |                                                                                                                                                                        |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>c                    | CLASSIFICATION OF MATERIALS<br>(Description)<br>s                   | % CORE<br>RECOVERY<br>e                                                       | BOX OR<br>SAMPLE<br>NO<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g<br><b>BLOWS</b>                                                              |  |
|                                                                                                                              |             |                                | Water                                                               |                                                                               |                               | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.4'.                                                                                                  |  |
|                                                                                                                              | 40          |                                | Bottom of Harbor <b>41.0</b><br><b>42.8</b>                         |                                                                               |                               |                                                                                                                                                                        |  |
| -41.0'                                                                                                                       |             |                                | (MH) Dark grey to black clayey SILT.                                |                                                                               | 1                             | 0                                                                                                                                                                      |  |
| -42.5'                                                                                                                       |             |                                | (SM) Dark grey to black, medium to coarse silty SAND. Some clay.    |                                                                               | 2                             | 4                                                                                                                                                                      |  |
| -44.0'                                                                                                                       |             |                                | (SC) Dark grey to black, medium to coarse clayey SAND. Some silt.   |                                                                               | 3                             | 15                                                                                                                                                                     |  |
| -45.0'                                                                                                                       |             |                                | (SM) Dark grey, fine to medium, silty SAND. Some clay.              |                                                                               | 4                             | 15                                                                                                                                                                     |  |
| -45.5'                                                                                                                       |             |                                | (SP) Tannish-light grey, coarse, poorly graded SAND. Trace of silt. |                                                                               | 5                             | 22                                                                                                                                                                     |  |
|                                                                                                                              |             |                                | With some fine gravel.                                              |                                                                               | 6                             | 56                                                                                                                                                                     |  |
| -50.0'                                                                                                                       | 50          |                                | Bottom of Boring 50.0'                                              |                                                                               |                               | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br><b>SPLITSPOON w/140 LB<br/>           HAMMER FALLING 30" FOR<br/>           THE LAST FOOT OF EACH DRIVE</b> |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |             |                                |                                                                     | splitspoon w/140 lb. hammer falling 30".                                      |                               |                                                                                                                                                                        |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                              |                   | Hole No. SH-219<br>SHEET 1<br>OF 1 SHEETS                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5/8" fishtail |                   |                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X-843587 Y-758420 GA. EAST                                                           |       |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW          |                   |                                                                                                                              |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314     |                   |                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-219                                                            |       |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 6 : 0 : 0     |                   |                                                                                                                              |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                              |                   |                                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                             |                   |                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 60.1' (WATER 42.6')                                                                               |       |                            |                                                                                                  | 16. DATE HOLE : STARTED 23 MAR 92 : COMPLETED 23 MAR 92    |                   |                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                             |                   |                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 60.1'                                                                                                 |       |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A %                   |                   |                                                                                                                              |  |
|                                                                                                                              |       |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.           |                   |                                                                                                                              |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY                                            | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. if significant)                                             |  |
| 0.0                                                                                                                          | 0     |                            |                                                                                                  |                                                            |                   | BLOWS                                                                                                                        |  |
|                                                                                                                              |       |                            | Water                                                                                            |                                                            |                   | Scale change at 40.0'.                                                                                                       |  |
|                                                                                                                              | 35    |                            |                                                                                                  |                                                            |                   |                                                                                                                              |  |
|                                                                                                                              | 40    |                            |                                                                                                  |                                                            |                   |                                                                                                                              |  |
| -42.6'                                                                                                                       |       |                            | Bottom of Harbor 42.6'                                                                           |                                                            |                   |                                                                                                                              |  |
|                                                                                                                              |       |                            | (CH) Very dark grey to black fat CLAY.                                                           |                                                            | 1                 |                                                                                                                              |  |
| -45.1'                                                                                                                       | 45    |                            | (SC) Very dark grey to grey fine to medium clayey SAND.                                          |                                                            | 2                 | Weight of rods drive split spoon from 42.6' to 46.6'. For sample #2 taken at change of material from approx. 45.1' to 46.6'. |  |
| -46.6'                                                                                                                       |       |                            | (SP) Light brownish grey coarse poorly graded SAND. Trace of silt and fine gravel.               |                                                            | 3                 |                                                                                                                              |  |
|                                                                                                                              | 50    |                            | Fine to medium sand.                                                                             |                                                            | 4                 |                                                                                                                              |  |
| -51.1'                                                                                                                       |       |                            |                                                                                                  |                                                            |                   |                                                                                                                              |  |
|                                                                                                                              | 55    |                            | (SM) Olive-grey fine silty SAND, some clay.                                                      |                                                            | 5                 |                                                                                                                              |  |
| -55.6'                                                                                                                       |       |                            |                                                                                                  |                                                            |                   |                                                                                                                              |  |
|                                                                                                                              |       |                            | (SC) Olive-grey fine clayey SAND, some silt.                                                     |                                                            | 6                 |                                                                                                                              |  |
| -58.6'                                                                                                                       |       |                            |                                                                                                  |                                                            |                   |                                                                                                                              |  |
| -60.1'                                                                                                                       | 60    |                            | Bottom of Boring 60.1'                                                                           |                                                            |                   |                                                                                                                              |  |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                            |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30".                            |  |



| DRILLING LOG                                                                                                                 |             | DIVISION    | INSTALLATION                                                                                     | HOLE NO. SH-220         |                              |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------------------------------------------------------------------------------------------------|-------------------------|------------------------------|--------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |             | AVANNAH, GA.                                                                                     |                         | SHEET 1 OF 1 SHEETS          |                                                                                                  |
| 2. LOCATION (Coordinates or Station)<br>X=844074 Y=758606 GA. EAST                                                           |             |             | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                                     |                         |                              |                                                                                                  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |             | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                         |                              |                                                                                                  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-220                                                            |             |             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                           |                         |                              |                                                                                                  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |             | BURDEN SAMPLES TAKEN : DISTURBED : UNDISTURBED<br>7 : 0                                          |                         |                              |                                                                                                  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |             | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                         |                              |                                                                                                  |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (Water 38.3')                                                                            |             |             | 15. ELEVATION GROUND WATER<br>N/A                                                                |                         |                              |                                                                                                  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |             | 16. DATE HOLE : STARTED : COMPLETED<br>21 JAN 92 : 21 JAN 92                                     |                         |                              |                                                                                                  |
| 9. TOTAL DEPTH OF HOLE<br>60.0'                                                                                              |             |             | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                         |                              |                                                                                                  |
|                                                                                                                              |             |             | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                         | X                            |                                                                                                  |
|                                                                                                                              |             |             | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                         |                              |                                                                                                  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g        |
|                                                                                                                              | 35          |             | Water                                                                                            |                         |                              | Scale change of 35.0'. Set 6" diameter casing by own weight to 43.5'.<br><br>BLOWS               |
|                                                                                                                              | 38.3'       |             | Bottom of Harbor 38.3'                                                                           |                         |                              |                                                                                                  |
|                                                                                                                              | 40          |             | (CH) Dark grey to black fat CLAY. Some silt.                                                     |                         | 1                            | Weight of rods drove splitspoon from 38.3' to 43.5'.<br><br>0                                    |
|                                                                                                                              | 43.5'       |             | (SM) Olive, fine silty SAND. Some clay.                                                          |                         | 2                            |                                                                                                  |
|                                                                                                                              | 45          |             |                                                                                                  |                         |                              | 100/0.4                                                                                          |
|                                                                                                                              | 48.0'       |             |                                                                                                  |                         |                              | 71                                                                                               |
|                                                                                                                              | 50          |             | Light olive, trace of clay.                                                                      |                         | 3                            | 45                                                                                               |
|                                                                                                                              | 51.0'       |             |                                                                                                  |                         |                              | 100/0.9                                                                                          |
|                                                                                                                              | 55          |             | (SC) olive-grey, fine clayey SAND. Some silt.                                                    |                         | 4                            | 100/0.9                                                                                          |
|                                                                                                                              | 57.0'       |             |                                                                                                  |                         |                              | 49                                                                                               |
|                                                                                                                              | 60.0'       |             |                                                                                                  |                         |                              | 51                                                                                               |
|                                                                                                                              |             |             |                                                                                                  |                         | 5                            | 32                                                                                               |
|                                                                                                                              |             |             |                                                                                                  |                         | 6                            | 25                                                                                               |
|                                                                                                                              |             |             |                                                                                                  |                         | 7                            | 86                                                                                               |
|                                                                                                                              |             |             |                                                                                                  |                         |                              | 48                                                                                               |
|                                                                                                                              |             |             | Bottom of Boring 60.0'                                                                           |                         |                              |                                                                                                  |
|                                                                                                                              |             |             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                         |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |

Hole No. SH-221

| DRILLING LOG                                                                                                                 |       | TOWN<br>SOUTH ATLANTIC |                                                                                      | INSTALLATION<br>SAVANNAH, GA.                                                                     |                         | SHEET 1<br>OF 1 SHEETS                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                        |                                                                                      | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 3/2" FISHTAIL                                      |                         |                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X=845069 Y=758051 GA. EAST                                                           |       |                        |                                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                         |                                                                                      |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                        |                                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                            |                         |                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-221                                                            |       |                        |                                                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>8                                                   |                         | DISTURBED<br>0                                                                       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                        |                                                                                      | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                         | 15. ELEVATION GROUND WATER N/A                                                       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                        |                                                                                      | 16. DATE HOLE<br>STARTED : 21 JAN 92                                                              |                         | COMPLETED : 21 JAN 92                                                                |  |
| 7. THICKNESS OF OVERBURDEN<br>60.8' (Water 45.8')                                                                            |       |                        |                                                                                      | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                         | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                        |                                                                                      | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                         | X                                                                                    |  |
| 9. TOTAL DEPTH OF HOLE<br>60.8'                                                                                              |       |                        |                                                                                      |                                                                                                   |                         |                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                 | CLASSIFICATION OF MATERIALS<br>(Description)                                         | % CORE<br>RECOVERY                                                                                | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |  |
| 0.0                                                                                                                          | 0     |                        |                                                                                      |                                                                                                   |                         | BLOWS                                                                                |  |
|                                                                                                                              |       |                        | Water                                                                                |                                                                                                   |                         | Scale change of 45.0'. Set 6" diameter casing by own weight to 48.8'.                |  |
|                                                                                                                              | 45    |                        | Bottom of Harbor 45.8'                                                               |                                                                                                   |                         |                                                                                      |  |
| -45.8'                                                                                                                       |       |                        | (CH) Dark grey to black, fat CLAY.                                                   |                                                                                                   | 1                       | 0                                                                                    |  |
| -48.1'                                                                                                                       |       |                        | (SC) Dark grey to black, coarse clayey SAND.<br>Some silt.                           |                                                                                                   | 2                       | Weight of rods drove split spoon                                                     |  |
| -48.8'                                                                                                                       |       |                        | (SP) Dark grey, coarse, poorly graded SAND.<br>Trace of silt, clay, and fine gravel. |                                                                                                   | 3                       | 48.8' w/18 blows. Sample 2 from approx. 48.1 to 48.8'.                               |  |
| -51.8'                                                                                                                       |       |                        | Fine to medium sand, no clay.                                                        |                                                                                                   |                         | Began using Zeogel drilling mud at 51.8'.                                            |  |
| -53.3'                                                                                                                       |       |                        | (SC) Olive-grey, fine, clayey SAND.<br>Trace of silt.                                |                                                                                                   | 4                       | 21                                                                                   |  |
|                                                                                                                              | 55    |                        |                                                                                      |                                                                                                   |                         | 37                                                                                   |  |
| -57.8'                                                                                                                       |       |                        | Some silt.                                                                           |                                                                                                   | 5                       | 20                                                                                   |  |
|                                                                                                                              | 60    |                        |                                                                                      |                                                                                                   |                         | 26                                                                                   |  |
| -60.8'                                                                                                                       |       |                        |                                                                                      |                                                                                                   | 6                       | 29                                                                                   |  |
|                                                                                                                              |       |                        | Bottom of Boring 60.8'                                                               |                                                                                                   |                         | 28                                                                                   |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                        |                                                                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |                         |                                                                                      |  |

Hole No. SM-222

| DRILLING LOG                                                                                                                 |       | DIVISION<br><b>SOUTH ATLANTIC</b> | INSTALLATION<br><b>SAVANNAH, GA.</b>                                                             |                 | SHEET 1<br>OF 1 SHEETS |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------|--------------------------------------------------------------------------------------------------|-----------------|------------------------|--------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                               |       |                                   | 10. SIZE AND TYPE OF BIT <b>1 3/8" splitspoon, 51/2" Fishtail</b>                                |                 |                        |                                                                                                  |
| 2. LOCATION (Coordinates or Station)<br><b>X-846062 Y-758304 GA. EAST</b>                                                    |       |                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                                         |                 |                        |                                                                                                  |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |       |                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>FAILING 314</b>                                    |                 |                        |                                                                                                  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>SH-222</b>                                                     |       |                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                       |                 | DISTURBED<br><b>6</b>  | UNDISTURBED<br><b>0</b>                                                                          |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |       |                                   | 14. TOTAL NUMBER CORE BOXES <b>0</b>                                                             |                 |                        |                                                                                                  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                                   | 15. ELEVATION GROUND WATER <b>N/A</b>                                                            |                 |                        |                                                                                                  |
| 7. THICKNESS OF OVERBURDEN <b>60.9' (Water 42.9')</b>                                                                        |       |                                   | 16. DATE HOLE<br>STARTED <b>23 NOV 91</b><br>COMPLETED <b>23 NOV 91</b>                          |                 |                        |                                                                                                  |
| 8. DEPTH DRILLED INTO ROCK <b>0.0'</b>                                                                                       |       |                                   | 17. ELEVATION TOP OF HOLE <b>0.0'</b>                                                            |                 |                        |                                                                                                  |
| 9. TOTAL DEPTH OF HOLE <b>60.9'</b>                                                                                          |       |                                   | 18. TOTAL CORE RECOVERY FOR BORING <b>N/A</b>                                                    |                 |                        |                                                                                                  |
|                                                                                                                              |       |                                   | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>                                          |                 |                        |                                                                                                  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                            | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY | BOX OR SAMPLE NO.      | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                |
| 0.0'                                                                                                                         | 0     |                                   |                                                                                                  |                 |                        | BLOWS                                                                                            |
|                                                                                                                              |       |                                   | Water                                                                                            |                 |                        | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 44.9'.                         |
|                                                                                                                              | 40    |                                   | Bottom of Harbor 42.9'                                                                           |                 |                        |                                                                                                  |
| -42.9'                                                                                                                       |       |                                   | (MH) Dark grey to black clayey SILT. Very soft & wet.                                            |                 | 1                      |                                                                                                  |
| -44.5'                                                                                                                       | 45    |                                   | (SM) Grey, coarse silty SAND.                                                                    |                 | 2                      | Weight of rods drove splitspoon from 42.9' to 45.9'.                                             |
| -47.4'                                                                                                                       |       |                                   | (SP) Tannish-grey, coarse, poorly graded SAND. Trace of silt.                                    |                 | 3                      |                                                                                                  |
| -50.4'                                                                                                                       | 50    |                                   | (SC) Olive-grey, fine clayey SAND. Some silt.                                                    |                 | 4                      |                                                                                                  |
| -56.4'                                                                                                                       | 55    |                                   | Occasional clay layer up to 0.1' thick.                                                          |                 | 5                      |                                                                                                  |
| -57.9'                                                                                                                       |       |                                   | No clay layers.                                                                                  |                 |                        |                                                                                                  |
| -60.9'                                                                                                                       | 60    |                                   | Bottom of Boring 60.9'                                                                           |                 | 6                      |                                                                                                  |
|                                                                                                                              | 30    |                                   | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                 |                        | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30". |

Hole No. SH-223

| DRILLING LOG                                                                                                                 |              | ON SOUTH ATLANTIC |                                                                         | INSTALLATION SAVANNAH, GA.                                                               |                              | SHEET 1 OF 1 SHEETS                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                         |              |                   |                                                                         | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5/8" fluted                                 |                              |                                                                                                                                                                                                                                                                                  |  |
| 2. LOCATION (Coordinates or Station) X-846554 Y-758055 GA. EAST                                                              |              |                   |                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or NSL) MLW                                           |                              |                                                                                                                                                                                                                                                                                  |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                         |              |                   |                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314                                      |                              |                                                                                                                                                                                                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-223                                                               |              |                   |                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                               |                              | DISTURBED : 5 UNDISTURBED : 0                                                                                                                                                                                                                                                    |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                             |              |                   |                                                                         | 14. TOTAL NUMBER CORE BOXES 0                                                            |                              |                                                                                                                                                                                                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                   |                                                                         | 15. ELEVATION GROUND WATER N/A                                                           |                              |                                                                                                                                                                                                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 59.8' (WATER 42.7')                                                                               |              |                   |                                                                         | 16. DATE HOLE                                                                            |                              | STARTED : 10 FEB 92 COMPLETED : 10 FEB 92                                                                                                                                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                   |                                                                         | 17. ELEVATION TOP OF HOLE 0.0'                                                           |                              |                                                                                                                                                                                                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.8'                                                                                                 |              |                   |                                                                         | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                 |                              |                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                              |              |                   |                                                                         | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.                                            |                              |                                                                                                                                                                                                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c       | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                       | % CORE<br>RECOV-<br>ERY<br>JAR                                                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling firm, water loss, depth of<br>weathering, etc. if significant)<br>g                                                                                                                                                                                         |  |
|                                                                                                                              |              |                   | Water                                                                   |                                                                                          |                              | Scale change at 40.0'.<br><br>Set 6" diameter casing by own weight to 49.5'.                                                                                                                                                                                                     |  |
|                                                                                                                              | 35           |                   |                                                                         |                                                                                          |                              |                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                              | 40           |                   | Bottom of Harbor 42.7'                                                  |                                                                                          |                              |                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                              | 45           |                   | (MH) Very dark grey clayey SILT.                                        |                                                                                          | 1                            | 0<br>Weight of rods drove split spoon from 42.7' to 46.3'.                                                                                                                                                                                                                       |  |
|                                                                                                                              | 46.3'        |                   | (SP) Light yellowish brown coarse poorly graded SAND, some fine gravel. |                                                                                          | 2                            | 28                                                                                                                                                                                                                                                                               |  |
|                                                                                                                              | 49.7'        |                   | (SM) Dark olive-grey fine silty SAND. (See remarks)<br>Some clay.       |                                                                                          | 3                            | 100/0.3'<br>No recovery on first attempt from 46.3' to 47.8'. Re-drove to 47.8' then continued drive to refusal at 48.6'. High blow count probably due to toolbinding inside casing. Wash return had coarse sand to approx. 49.7' then dark olive-grey fine silty sand to 50.8'. |  |
|                                                                                                                              | 50.8'        |                   |                                                                         |                                                                                          | 4                            | 32                                                                                                                                                                                                                                                                               |  |
|                                                                                                                              | 53.8'        |                   | (SC) Dark olive-grey fine clayey SAND, some silt.                       |                                                                                          | 5                            | 46                                                                                                                                                                                                                                                                               |  |
|                                                                                                                              | 55           |                   |                                                                         |                                                                                          |                              | 32                                                                                                                                                                                                                                                                               |  |
|                                                                                                                              | 59.8'        |                   | Bottom of Boring 59.8'                                                  |                                                                                          |                              | 59                                                                                                                                                                                                                                                                               |  |
|                                                                                                                              | 60           |                   |                                                                         |                                                                                          |                              | 44                                                                                                                                                                                                                                                                               |  |
|                                                                                                                              |              |                   |                                                                         |                                                                                          |                              | 29                                                                                                                                                                                                                                                                               |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                   |                                                                         | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. casing at 140 p.s.f. blow count. |                              |                                                                                                                                                                                                                                                                                  |  |

Hole No. SH-224

| DRILLING LOG                                                                                                                 |               | ON SOUTH ATLANTIC |                                                                                                        | INSTALLATION SAVANNAH, GA.                                |                                | SHEET 1 OF 1 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                   |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" spitspoon, 51/2" Fishtail |                                |                                                                                                    |  |
| 2. LOCATION (Coordinates or Station)<br>X-847301 Y-758103 GA. EAST                                                           |               |                   |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                                    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                   |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FAILING 314    |                                |                                                                                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-224                                                            |               |                   |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6           |                                | DISTURBED<br>0                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                   |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                          |                                | UNDISTURBED<br>0                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                   |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                         |                                |                                                                                                    |  |
| 7. THICKNESS OF OVERBURDEN 60.8' (Water 41.5')                                                                               |               |                   |                                                                                                        | 16. DATE MOLE<br>12 FEB 92                                |                                | STARTED<br>12 FEB 92                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |               |                   |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                         |                                | COMPLETED<br>12 FEB 92                                                                             |  |
| 9. TOTAL DEPTH OF HOLE 60.8'                                                                                                 |               |                   |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                 |                                |                                                                                                    |  |
|                                                                                                                              |               |                   |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                |                                                                                                    |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>c       | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                      | % CORE<br>RECOVERY                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g          |  |
|                                                                                                                              |               |                   | Water                                                                                                  |                                                           |                                | Scale change at 40.0'.<br>Set 5" diameter casing by own<br>weight to 44.8'.                        |  |
| -41.5'                                                                                                                       |               |                   | Bottom of Harbor 41.5'                                                                                 |                                                           |                                |                                                                                                    |  |
| -44.3'                                                                                                                       |               |                   | (MH) Very dark grey to black clayey SILT.                                                              |                                                           | 1                              | Weight of rods drove spitspoon<br>from 41.5' to 44.3'.                                             |  |
|                                                                                                                              |               |                   | (SM) Olive, fine silty SAND. Trace of clay.                                                            |                                                           | 2                              |                                                                                                    |  |
| -48.8'                                                                                                                       |               |                   |                                                                                                        |                                                           |                                |                                                                                                    |  |
|                                                                                                                              |               |                   | Olive-grey.                                                                                            |                                                           | 3                              |                                                                                                    |  |
| -54.8'                                                                                                                       |               |                   |                                                                                                        |                                                           | 4                              |                                                                                                    |  |
| -56.3'                                                                                                                       |               |                   | Some clay.                                                                                             |                                                           | 5                              |                                                                                                    |  |
|                                                                                                                              |               |                   | (SC) Dark olive-grey, fine clayey SAND. Some<br>silt.                                                  |                                                           | 6                              |                                                                                                    |  |
| -60.8'                                                                                                                       |               |                   | Bottom of Boring 60.8'                                                                                 |                                                           |                                |                                                                                                    |  |
|                                                                                                                              |               |                   | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                           |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>spitspoon w/140 lb. hammer falling 30". |  |

| DRILLING LOG                                                                                                                 |               | TOWN<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                                  |                                | Hole No. SH-225<br>SHEET 1<br>OF 1 SHEETS                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                        |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/4" spoilspoon, 5 1/2" Fishtail                 |                                |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-847906 Y-758626 GA. EAST                                                           |               |                        |                                                                                                        | 11. DATUM FOR ELEVATION SHOWING<br>MLW                                         |                                |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                        |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                         |                                |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-225                                                            |               |                        |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 8<br>UNDISTURBED : 0 |                                |                                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                        |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                                |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                        |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                                              |                                |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>60.5' (Water 44.0')                                                                            |               |                        |                                                                                                        | 16. DATE HOLE<br>STARTED : 12 FEB 92<br>COMPLETED : 12 FEB 92                  |                                |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |               |                        |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                                |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                              |               |                        |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                                |                                                                                                     |  |
|                                                                                                                              |               |                        |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                                |                                                                                                     |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>c            | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOV-<br>ERY                                                        | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g            |  |
|                                                                                                                              |               |                        | Water                                                                                                  |                                                                                |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 45.4'.                         |  |
|                                                                                                                              | 40            |                        | Bottom of Harbor 44.0'                                                                                 |                                                                                |                                |                                                                                                     |  |
| -44.0'                                                                                                                       | 45            |                        | (MH) Very dark gray to black, clayey SILT.<br>Trace of medium to coarse sand.                          |                                                                                | 1                              | Weight of rods drove spoilspoon<br>from 44.0' to 45.5'. 0                                           |  |
| -45.5'                                                                                                                       |               |                        | (SC) Olive, fine clayey SAND. Some silt.                                                               |                                                                                | 2                              | 100/0.8                                                                                             |  |
| -47.0'                                                                                                                       |               |                        | (SM) Olive, fine silty SAND. Some clay.                                                                |                                                                                | 3                              | 100/0.9                                                                                             |  |
|                                                                                                                              | 50            |                        |                                                                                                        |                                                                                |                                | 100/0.9                                                                                             |  |
|                                                                                                                              |               |                        |                                                                                                        |                                                                                | 4                              | 100/0.9                                                                                             |  |
| -53.0'                                                                                                                       |               |                        | (SC) Olive, fine clayey SAND. Some silt.                                                               |                                                                                | 5                              | 46                                                                                                  |  |
|                                                                                                                              | 55            |                        |                                                                                                        |                                                                                |                                | 48                                                                                                  |  |
|                                                                                                                              |               |                        |                                                                                                        |                                                                                |                                | 37                                                                                                  |  |
|                                                                                                                              | 60            |                        |                                                                                                        |                                                                                | 6                              | 26                                                                                                  |  |
| -60.5'                                                                                                                       |               |                        | Bottom of Boring 60.5'                                                                                 |                                                                                |                                | 33                                                                                                  |  |
|                                                                                                                              | 30            |                        | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                                |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D.<br>spoilspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-226

| DRILLING LOG                                                                                                                 |             | LOCATION<br>SOUTH ATLANTIC |                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                                        |                                | SHEET 1<br>OF 1 SHEETS                                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/4" split spoon, 5 1/2" Fishtail                                      |                                |                                                                                                 |  |
| 2. LOCATION (Coordinates or Station)<br>X=848357 Y=759173 GA. EAST                                                           |             |                            |                                                                  | 11. DATUM FOR ELEVATION SHOWING<br>MLW                                                               |                                |                                                                                                 |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                                                |                                |                                                                                                 |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-226                                                            |             |                            |                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6                                                      |                                | DISTURBED<br>0                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                                                     |                                | 15. ELEVATION GROUND WATER<br>N/A                                                               |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                  | 16. DATE HOLE<br>8 FEB 92                                                                            |                                | STARTED<br>8 FEB 92                                                                             |  |
| 7. THICKNESS OF OVERBURDEN<br>60.5' (Water 42.2')                                                                            |             |                            |                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                    |                                | COMPLETED<br>8 FEB 92                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                            |                                | %                                                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                              |             |                            |                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                     |                                |                                                                                                 |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                | % CORE<br>RECOVERY                                                                                   | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>b       |  |
|                                                                                                                              |             |                            | Water                                                            |                                                                                                      |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 47.0'.                     |  |
| -42.2'                                                                                                                       |             |                            | Bottom of Harbor 42.2'                                           |                                                                                                      |                                |                                                                                                 |  |
|                                                                                                                              |             |                            | (MB) Very dark gray to black clayey SILT.                        |                                                                                                      | 1                              | weight of rods drove split spoon<br>from 42.2' to 47.0'. Jar sample 2<br>from 46.3' to 47.0'. 0 |  |
| -46.3'                                                                                                                       |             |                            | (SC) Very dark gray & olive gray, fine<br>to medium clayey SAND. |                                                                                                      | 2                              |                                                                                                 |  |
| -47.0'                                                                                                                       |             |                            | (SM) Olive, fine, silty SAND. Trace of clay.                     |                                                                                                      | 3                              | 100/0.9                                                                                         |  |
|                                                                                                                              |             |                            | Olive gray, some clay.                                           |                                                                                                      | 4                              | 25                                                                                              |  |
| -50.0'                                                                                                                       |             |                            |                                                                  |                                                                                                      | 5                              | 54                                                                                              |  |
|                                                                                                                              |             |                            | Dark gray, trace of clay.                                        |                                                                                                      | 6                              | 56                                                                                              |  |
| -54.5'                                                                                                                       |             |                            |                                                                  |                                                                                                      |                                | 49                                                                                              |  |
| -56.5'                                                                                                                       |             |                            | Some clay.                                                       |                                                                                                      |                                | 37                                                                                              |  |
|                                                                                                                              |             |                            |                                                                  |                                                                                                      |                                | 31                                                                                              |  |
| -60.5'                                                                                                                       |             |                            |                                                                  |                                                                                                      |                                | 25                                                                                              |  |
|                                                                                                                              |             |                            | Bottom of Boring 60.5'                                           |                                                                                                      |                                | 27                                                                                              |  |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.                       |             |                            |                                                                  | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D.<br>split spoon w/140 lb. hammer falling 30". |                                |                                                                                                 |  |

NO 18 NOV 77

| DRILLING LOG                                                                                                              |       | ION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                               |                       | SHEET 1 OF 1 SHEETS                                                                               |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|--------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                    |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5 1/2" Fish tail            |                       |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station) X-848947 Y-759082 GA. EAST                                                           |       |                    |                                                                                                  | 11. DATUM FOR ELEVATION SHOWED BM or MSL MLW                             |                       |                                                                                                   |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                    |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314                      |                       |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-227                                                            |       |                    |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :UNDISTURBED 16 :0 |                       |                                                                                                   |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                    |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                            |                       |                                                                                                   |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                    |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                           |                       |                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 60.0' (Water 44.4')                                                                            |       |                    |                                                                                                  | 16. DATE HOLE :STARTED :8 FEB 92 :COMPLETED :8 FEB 92                    |                       |                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                    |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                           |                       |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                              |       |                    |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                                   |                       |                                                                                                   |  |
|                                                                                                                           |       |                    |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.                            |                       |                                                                                                   |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND             | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                                          | BOX OR SAMPLE NO. JAR | REMARKS (Drilling time, water loss, depth of weathering, etc. If significant)                     |  |
| 0.0'                                                                                                                      | 0     |                    |                                                                                                  |                                                                          |                       | BLOWS                                                                                             |  |
|                                                                                                                           | 40    |                    | Water                                                                                            |                                                                          |                       | Scale change at 40.0'. Set 6" diameter casing by own weight to 46.3'.                             |  |
| -44.4'                                                                                                                    | 45    |                    | Bottom of Harbor 44.4'                                                                           |                                                                          |                       |                                                                                                   |  |
| -45.8'                                                                                                                    |       |                    | (MH) Very dark grey to black clayey silt. Trace of fine sand.                                    |                                                                          | 1                     | Weight of rods drove split spoon from 44.4' to 46.5'. Jar sample 2 from 45.8' to 46.5'.           |  |
|                                                                                                                           |       |                    | (SM) Olive-grey, fine silty SAND. Trace of clay.                                                 |                                                                          | 2                     | 0                                                                                                 |  |
|                                                                                                                           |       |                    |                                                                                                  |                                                                          | 3                     | 100/0.8                                                                                           |  |
| -49.5'                                                                                                                    | 50    |                    | Some clay                                                                                        |                                                                          | 4                     | 100/0.9                                                                                           |  |
|                                                                                                                           |       |                    |                                                                                                  |                                                                          | 5                     | 73                                                                                                |  |
|                                                                                                                           | 55    |                    |                                                                                                  |                                                                          |                       | 60                                                                                                |  |
|                                                                                                                           |       |                    |                                                                                                  |                                                                          |                       | 54                                                                                                |  |
|                                                                                                                           | 60    |                    |                                                                                                  |                                                                          | 6                     | 38                                                                                                |  |
| -60.0'                                                                                                                    | 60    |                    | Bottom of Boring 60.0'                                                                           |                                                                          |                       | 35                                                                                                |  |
|                                                                                                                           |       |                    |                                                                                                  |                                                                          |                       | 41                                                                                                |  |
|                                                                                                                           | 30    |                    |                                                                                                  |                                                                          |                       | 62                                                                                                |  |
|                                                                                                                           |       |                    | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                          |                       | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |  |



FORM NO. 311-220

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                   |                                  | SHEET 1<br>OF 1 SHEETS                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                   | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5/8" FISHTAIL                                       |                                  |                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X-850377 Y-759452 GA. EAST                                                           |             |                            |                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                               |                                  |                                                                                              |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                          |                                  |                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-228                                                            |             |                            |                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED : 8 : UNDISTURBED : 0                    |                                  |                                                                                              |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                   | 14. TOTAL NUMBER CORE BOXES 0                                                                   |                                  |                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                   | 15. ELEVATION GROUND WATER N/A                                                                  |                                  |                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 60.2' (Water 33.2')                                                                               |             |                            |                                                                   | 16. DATE HOLE : STARTED : 19 DEC 91 : COMPLETED : 19 DEC 91                                     |                                  |                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                   | 17. ELEVATION TOP OF HOLE 0.0'                                                                  |                                  |                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 60.2'                                                                                                 |             |                            |                                                                   | 18. TOTAL CORE RECOVERY FOR BORING N/A X                                                        |                                  |                                                                                              |  |
| 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                                             |             |                            |                                                                   |                                                                                                 |                                  |                                                                                              |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                 | % CORE<br>RECOVERY<br>*                                                                         | BOX OR<br>SAMPLE<br>NO.<br>(JAR) | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>BLOWS |  |
|                                                                                                                              | 30          |                            | Water.                                                            |                                                                                                 |                                  | Scale change at 30.0'. Set 6" diameter casing by own weight to 36.6'.                        |  |
| -33.2'                                                                                                                       |             |                            | Bottom of Harbor 33.2'                                            |                                                                                                 |                                  |                                                                                              |  |
|                                                                                                                              | 35          |                            | (SM) Dark grey to black clayey SILT.<br>Some fine to medium sand. |                                                                                                 | 1                                | Weight of rods drove splitspoon from 33.2' to 36.2'.                                         |  |
| -36.2'                                                                                                                       |             |                            | (SC) Olive-grey, fine clayey SAND.<br>Trace of silt & mica.       |                                                                                                 | 2                                | 0                                                                                            |  |
|                                                                                                                              | 40          |                            |                                                                   |                                                                                                 |                                  | 22                                                                                           |  |
|                                                                                                                              |             |                            |                                                                   |                                                                                                 | 3                                | 51                                                                                           |  |
|                                                                                                                              | 45          |                            |                                                                   |                                                                                                 |                                  | 37                                                                                           |  |
| -46.7'                                                                                                                       |             |                            |                                                                   |                                                                                                 | 4                                | 76                                                                                           |  |
| -48.2'                                                                                                                       |             |                            | Some silt.                                                        |                                                                                                 |                                  | 78                                                                                           |  |
|                                                                                                                              | 50          |                            | Trace of silt.                                                    |                                                                                                 | 5                                | 41                                                                                           |  |
|                                                                                                                              |             |                            |                                                                   |                                                                                                 |                                  | 28                                                                                           |  |
| 52.7'                                                                                                                        |             |                            | (CL) Olive-grey, silty, lean CLAY.<br>Some fine sand.             |                                                                                                 | 6                                | 72                                                                                           |  |
| -54.2'                                                                                                                       |             |                            |                                                                   |                                                                                                 |                                  | 46                                                                                           |  |
|                                                                                                                              | 55          |                            | (SC) Olive-grey, fine clayey SAND.<br>Trace of silt & mica.       |                                                                                                 | 7                                | 26                                                                                           |  |
|                                                                                                                              |             |                            |                                                                   |                                                                                                 |                                  | 33                                                                                           |  |
|                                                                                                                              | 60          |                            |                                                                   |                                                                                                 | 8                                | 19                                                                                           |  |
| -50.1'                                                                                                                       |             |                            |                                                                   |                                                                                                 |                                  | 21                                                                                           |  |
|                                                                                                                              |             |                            | Bottom of Boring 60.2'                                            |                                                                                                 |                                  | 21                                                                                           |  |
| NOTE: Soils visually field classified in accordance with the United Soil Classification System.                              |             |                            |                                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30" |                                  |                                                                                              |  |

11018 110. 311-223

| DRILLING LOG                                                                                                              |       | DIVISION SOUTH ATLANTIC |                                                                      | INSTALLATION SAVANNAH, GA.                                                                        |                   | SHEET 1 OF 1 SHEETS                                                                              |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|-------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                         |                                                                      | 10. SIZE AND TYPE OF BIT 1 1/4" split spoon, 5/2" flight bit                                      |                   |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station) X-850478 Y-760035 GA. EAST                                                           |       |                         |                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                    |                   |                                                                                                  |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                         |                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314                                               |                   |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-229                                                            |       |                         |                                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN :DISTURBED :5 :UNDISTURBED :0                          |                   |                                                                                                  |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                         |                                                                      | 14. TOTAL NUMBER CORE BOXES 0                                                                     |                   |                                                                                                  |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                         |                                                                      | 15. ELEVATION GROUND WATER N/A                                                                    |                   |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 60.5' (WATER 45.5')                                                                            |       |                         |                                                                      | 16. DATE HOLE :STARTED :9 FEB 92 :COMPLETED :9 FEB 92                                             |                   |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                         |                                                                      | 17. ELEVATION TOP OF HOLE 0.0'                                                                    |                   |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 60.5'                                                                                              |       |                         |                                                                      | 18. TOTAL CORE RECOVERY FOR BORING N/A X                                                          |                   |                                                                                                  |  |
|                                                                                                                           |       |                         |                                                                      | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.                                                     |                   |                                                                                                  |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                  | CLASSIFICATION OF MATERIALS (Description)                            | % CORE RECOVERY                                                                                   | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc. If significant)                    |  |
| 0.0                                                                                                                       | 0.0   |                         |                                                                      |                                                                                                   |                   | BLOWS                                                                                            |  |
|                                                                                                                           | 35    |                         | Water                                                                |                                                                                                   |                   | Scale change at 45.0'.<br>Set 6" diameter casing by own weight to 48.1'.                         |  |
|                                                                                                                           | 40    |                         |                                                                      |                                                                                                   |                   |                                                                                                  |  |
|                                                                                                                           | 45    |                         | Bottom of Harbor 45.5'                                               |                                                                                                   |                   |                                                                                                  |  |
| -45.5'                                                                                                                    | 45    |                         | (MH) Very dark grey to black clayey SILT.                            |                                                                                                   | 1                 | Weight of rods drove split spoon from 45.5' to 48.5'. Jar sample #2 from approx. 47.5' to 48.5'. |  |
| -47.5'                                                                                                                    | 47.5  |                         | (SC) Dark grey and olive-grey fine to medium clayey SAND, some silt. |                                                                                                   | 2                 |                                                                                                  |  |
| -48.5'                                                                                                                    | 48.5  |                         | (SM) Olive-grey fine silty SAND, some clay.                          |                                                                                                   | 3                 |                                                                                                  |  |
| -50.0'                                                                                                                    | 50    |                         | Trace of clay.                                                       |                                                                                                   |                   |                                                                                                  |  |
|                                                                                                                           | 55    |                         |                                                                      |                                                                                                   | 4                 |                                                                                                  |  |
| -54.5'                                                                                                                    | 54.5  |                         | (SC) Dark olive-grey fine clayey SAND, some silt.                    |                                                                                                   | 5                 |                                                                                                  |  |
|                                                                                                                           | 60    |                         |                                                                      |                                                                                                   | 6                 |                                                                                                  |  |
| -60.5'                                                                                                                    | 60    |                         | Bottom of Boring 60.5'                                               |                                                                                                   |                   |                                                                                                  |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                          |       |                         |                                                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |                   |                                                                                                  |  |

Hole No. SM-230

| DRILLING LOG                                                                                                                 |               | DIVISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION ANNAH, GA.                                      |                              | SHEET 1 OF 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                         |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5 1/2" fishtail |                              |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-851276 Y-760134 GA. EAST                                                           |               |                         |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                         |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314       |                              |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-230                                                            |               |                         |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | DISTURBED : 4<br>UNDISTURBED : 0                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                         |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                |                              |                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                         |                                                                                                  | 15. ELEVATION GROUND WATER N/A                               |                              |                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 60.4' (WATER 45.4')                                                                               |               |                         |                                                                                                  | 16. DATE HOLE                                                |                              | STARTED : 9 FEB 92<br>COMPLETED : 9 FEB 92                                                        |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |               |                         |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                               |                              | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                          |  |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                                 |               |                         |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                                   |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>JAR                                    | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         |  |
|                                                                                                                              |               |                         | Water                                                                                            |                                                              |                              | Scale change at 45.0'.<br>Set 6" diameter casing by own weight to 46.5'.<br><br>BLOWS             |  |
|                                                                                                                              | 15<br>35      |                         |                                                                                                  |                                                              |                              |                                                                                                   |  |
|                                                                                                                              | 30<br>40      |                         |                                                                                                  |                                                              |                              |                                                                                                   |  |
|                                                                                                                              | 45            |                         | Bottom of Harbor 45.4'                                                                           |                                                              |                              |                                                                                                   |  |
| -45.4'                                                                                                                       |               |                         | (SM) Olive-grey fine silty SAND, some clay, layer of medium to coarse sand from 45.4' to 45.6'   |                                                              | 1                            | Weight of rods drove split spoon from 45.4' to 46.7'.                                             |  |
|                                                                                                                              |               |                         |                                                                                                  |                                                              |                              |                                                                                                   |  |
| -49.9'                                                                                                                       | 50            |                         | Light olive-grey, trace of clay                                                                  |                                                              | 2                            |                                                                                                   |  |
| -51.4'                                                                                                                       |               |                         | Indurated layer, 1/4" thick at approx. 52.0'                                                     |                                                              |                              | 100/0.5'                                                                                          |  |
| -52.9'                                                                                                                       |               |                         | Dark olive-grey, some clay.                                                                      |                                                              |                              | 100/0.9'                                                                                          |  |
| -54.4'                                                                                                                       | 55            |                         | (SC) Dark olive-grey fine clayey SAND, some silt                                                 |                                                              | 3                            |                                                                                                   |  |
|                                                                                                                              |               |                         |                                                                                                  |                                                              |                              |                                                                                                   |  |
|                                                                                                                              |               |                         |                                                                                                  |                                                              |                              |                                                                                                   |  |
| -60.4'                                                                                                                       | 60            |                         | Bottom of Boring 60.4'                                                                           |                                                              | 4                            |                                                                                                   |  |
|                                                                                                                              |               |                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30". |  |

Hole No. SH-231

| DRILLING LOG                                                                                                                 |              | STATION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                           |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/8" SPLITSPOON, 5/2" FISHTAIL |                                |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-852021 Y-760208 GA. EAST                                                           |              |                           |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                                |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                           |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 1500      |                                |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-231                                                            |              |                           |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4              |                                | DISTURBED<br>0                                                                                   |  |
| 5. NAME OF DRILLER<br>DOUGLAS LaROCHE                                                                                        |              |                           |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                | UNDISTURBED<br>0                                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                           |                                                                                                  | 15. ELEVATION GROUND WATER N/A                               |                                |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 50.0' (Water 42.9')                                                                               |              |                           |                                                                                                  | 16. DATE HOLE<br>19 NOV 91                                   |                                | COMPLETED<br>19 NOV 91                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                           |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |              |                           |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>CHRIS DAVID LEETH, GEOLOGIST   |                                |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>z               | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE<br>RECOVER-<br>ERY<br>b                               | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g         |  |
|                                                                                                                              | 40           |                           | Water                                                                                            |                                                              |                                | Scale change at 40.0'.                                                                           |  |
| -42.9'                                                                                                                       | 45           |                           | Bottom of Harbor 42.9'                                                                           |                                                              |                                |                                                                                                  |  |
|                                                                                                                              | 50           |                           | (MH) Green, stiff, fat silt. Trace of sand, moist, slight organic odor.                          |                                                              | 1                              | Weight of hammer drive splitspoon to 48.0'.<br>0                                                 |  |
|                                                                                                                              | 55           |                           |                                                                                                  |                                                              | 2                              | 61                                                                                               |  |
| -54.0'                                                                                                                       | 55           |                           | Trace of gravel & sand.                                                                          |                                                              | 3                              | 86                                                                                               |  |
|                                                                                                                              | 60           |                           | No gravel.                                                                                       |                                                              | 4                              | 100/0.4                                                                                          |  |
| -57.0'                                                                                                                       |              |                           |                                                                                                  |                                                              |                                | 77                                                                                               |  |
| -60.0'                                                                                                                       |              |                           |                                                                                                  |                                                              |                                | 100/0.6                                                                                          |  |
|                                                                                                                              |              |                           | Bottom of Boring 60.0'                                                                           |                                                              |                                | 100                                                                                              |  |
|                                                                                                                              |              |                           | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                                | 96                                                                                               |  |
|                                                                                                                              |              |                           |                                                                                                  |                                                              |                                | 76                                                                                               |  |
|                                                                                                                              |              |                           |                                                                                                  |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30". |  |

HOLE NO. SH-233

| DRILLING LOG                                                                                                                 |       | DIVISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                    |                   | SHEET 1 OF 1 SHEETS                                                                                                                                     |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                         |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/4" split spoon, 5 1/2" fish tail |                   |                                                                                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X-852921 Y-761143 GA. EAST                                                           |       |                         |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW             |                   |                                                                                                                                                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                         |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314        |                   |                                                                                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-233                                                            |       |                         |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                    |                   | 13. DISTURBED : 5<br>13. UNDISTURBED : 0                                                                                                                |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                         |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                 |                   |                                                                                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                         |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                |                   |                                                                                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN 59.7' (WATER 44.0')                                                                               |       |                         |                                                                                                  | 16. DATE HOLE                                                 |                   | 16. STARTED : 10 FEB 92<br>16. COMPLETED : 10 FEB 92                                                                                                    |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                         |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                |                   |                                                                                                                                                         |  |
| 9. TOTAL DEPTH OF HOLE 59.7'                                                                                                 |       |                         |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                        |                   |                                                                                                                                                         |  |
|                                                                                                                              |       |                         |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |                   |                                                                                                                                                         |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                  | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY<br>JAR                                        | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. if significant)                                                                        |  |
| 0.0                                                                                                                          | 0     |                         |                                                                                                  |                                                               |                   | BLOWS                                                                                                                                                   |  |
|                                                                                                                              |       |                         | Water                                                                                            |                                                               |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 46.9'.                                                                                |  |
| -44.0'                                                                                                                       | 45    |                         | Bottom of Harbor 44.0'                                                                           |                                                               |                   |                                                                                                                                                         |  |
|                                                                                                                              |       |                         | (Mht) Very dark grey to black clayey SILT, some fine to medium sand.                             |                                                               | 1                 | Weight of rods drove split spoon from 44.0' to 46.2'. No recovery. Re-drove to 46.2', then continued drive to 47.7'. Jar sample #1 from 44.0' to 47.7'. |  |
| -47.7'                                                                                                                       |       |                         | (SM) Olive-grey fine silty SAND, some clay.                                                      |                                                               | 2                 |                                                                                                                                                         |  |
| -49.2'                                                                                                                       | 50    |                         | Trace of clay                                                                                    |                                                               |                   |                                                                                                                                                         |  |
|                                                                                                                              |       |                         | Some clay.                                                                                       |                                                               | 3                 |                                                                                                                                                         |  |
| -52.2'                                                                                                                       |       |                         | Trace of clay                                                                                    |                                                               |                   |                                                                                                                                                         |  |
| -53.7'                                                                                                                       | 55    |                         | Light olive-grey.                                                                                |                                                               | 4                 |                                                                                                                                                         |  |
| -55.2'                                                                                                                       |       |                         | Olive-grey, some clay.                                                                           |                                                               | 5                 |                                                                                                                                                         |  |
| -58.2'                                                                                                                       | 60    |                         | Bottom of Boring 59.7'                                                                           |                                                               |                   |                                                                                                                                                         |  |
| -59.7'                                                                                                                       |       |                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                               |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30".                                                       |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                  |                   | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/8" splitspoon, 5 1/2" Fishtail                 |                   |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X-853569 Y-760911 GA. EAST                                                           |       |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBW or NSL)<br>MLW                              |                   |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                          |                   |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-234                                                            |       |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 5<br>UNDISTURBED : 0 |                   |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                   |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                                 |                   |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN<br>59.8' (Water 44.8')                                                                            |       |                            |                                                                                                  | 16. DATE HOLE<br>STARTED : 11 FEB 92<br>COMPLETED : 11 FEB 92                  |                   |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                              |                   |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE<br>59.8'                                                                                              |       |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                      |                   |                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                   |                                                                                                  |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY                                                                | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                |  |
| 0.0                                                                                                                          | 0.0   |                            |                                                                                                  |                                                                                |                   | BLOWS                                                                                            |  |
|                                                                                                                              | 40    |                            | Water                                                                                            |                                                                                |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 46.4'.                         |  |
|                                                                                                                              | 44.8' |                            | Bottom of Harbor 44.8'                                                                           |                                                                                |                   |                                                                                                  |  |
|                                                                                                                              | 45    |                            | (MH) Very dark grey to black clayey SILT.                                                        |                                                                                | 1                 | Weight of rods drove splitspoon from 44.8' to 46.3'.                                             |  |
|                                                                                                                              | 46.3' |                            | (SM) Olive-grey, fine silty SAND. Some clay.                                                     |                                                                                | 2                 | 0                                                                                                |  |
|                                                                                                                              | 50    |                            |                                                                                                  |                                                                                |                   | 93                                                                                               |  |
|                                                                                                                              | 55    |                            |                                                                                                  |                                                                                |                   | 58                                                                                               |  |
|                                                                                                                              | 53.8' |                            | Olive, trace of clay.                                                                            |                                                                                | 3                 | 77                                                                                               |  |
|                                                                                                                              | 55.3' |                            | (SC) Olive-grey, fine clayey SAND. Some silt.                                                    |                                                                                |                   | 66                                                                                               |  |
|                                                                                                                              | 56.8' |                            | Trace of silt.                                                                                   |                                                                                | 4                 | 59                                                                                               |  |
|                                                                                                                              | 58.3' |                            | Same silt.                                                                                       |                                                                                |                   | 100/0.9                                                                                          |  |
|                                                                                                                              | 59.8' |                            |                                                                                                  |                                                                                | 5                 | 51                                                                                               |  |
|                                                                                                                              | 60    |                            | Bottom of Boring 59.8'                                                                           |                                                                                |                   | 31                                                                                               |  |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                   | 41                                                                                               |  |
|                                                                                                                              |       |                            |                                                                                                  |                                                                                |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30". |  |

| DRILLING LOG                                                                                                              |       | DIVISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION ANNAH, GA.                                 |                   | SHEET 1 OF 1 SHEETS                                                                                                       |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|-------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                         |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/2" finish |                   |                                                                                                                           |  |
| 2. LOCATION (Coordinates or Station) X-854160 Y-761499 GA. EAST                                                           |       |                         |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW          |                   |                                                                                                                           |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                         |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314     |                   |                                                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-235                                                            |       |                         |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN              |                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                                |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                         |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                           |                   | 14. TOTAL NUMBER CORE BOXES 0                                                                                             |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                         |                                                                                                  | 15. ELEVATION GROUND WATER N/A                          |                   | 15. ELEVATION GROUND WATER N/A                                                                                            |  |
| 7. THICKNESS OF OVERBURDEN 60.9' (WATER 44.4')                                                                            |       |                         |                                                                                                  | 16. DATE HOLE STARTED 11 FEB 92 COMPLETED 11 FEB 92     |                   | 16. DATE HOLE STARTED 11 FEB 92 COMPLETED 11 FEB 92                                                                       |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                         |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                          |                   | 17. ELEVATION TOP OF HOLE 0.0'                                                                                            |  |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                                              |       |                         |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A %                |                   | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                                                  |  |
|                                                                                                                           |       |                         |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.           |                   |                                                                                                                           |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                  | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, change of weathering, etc. if significant)                                            |  |
| 0.0                                                                                                                       | 0.0   |                         |                                                                                                  | JAR                                                     |                   | BLOWS                                                                                                                     |  |
|                                                                                                                           |       |                         | Water.                                                                                           |                                                         |                   | Scale change at 40.0'.                                                                                                    |  |
|                                                                                                                           |       |                         |                                                                                                  |                                                         |                   | Set 6" diameter casing by own weight to 45.2'.                                                                            |  |
|                                                                                                                           | 40    |                         |                                                                                                  |                                                         |                   |                                                                                                                           |  |
|                                                                                                                           |       |                         | Bottom of Harbor 44.4'                                                                           |                                                         |                   |                                                                                                                           |  |
| -44.4'                                                                                                                    | 45    |                         | (MH) Very dark grey to black clayey SILT.                                                        |                                                         | 1                 | Weight of rods drove splitspoon from 44.4' to 45.7'; continued drive to 45.9'. Jar sample #2 from approx. 44.9' to 45.9'. |  |
| -44.9'                                                                                                                    |       |                         | (SM) Olive-grey fine silty SAND, some clay.                                                      |                                                         | 2                 | 5                                                                                                                         |  |
| -45.9'                                                                                                                    |       |                         | (SC) Dark olive-grey fine clayey SAND, some silt.                                                |                                                         | 3                 | 100/0.8'                                                                                                                  |  |
|                                                                                                                           |       |                         |                                                                                                  |                                                         |                   | 100/0.9'                                                                                                                  |  |
|                                                                                                                           | 50    |                         |                                                                                                  |                                                         |                   | 100/0.9'                                                                                                                  |  |
|                                                                                                                           |       |                         |                                                                                                  |                                                         | 4                 | 58                                                                                                                        |  |
|                                                                                                                           |       |                         |                                                                                                  |                                                         |                   | 92                                                                                                                        |  |
| -53.4'                                                                                                                    |       |                         | Light olive-grey.                                                                                |                                                         | 5                 | 100/0.9'                                                                                                                  |  |
| -54.9'                                                                                                                    | 55    |                         | Olive-grey, trace of silt.                                                                       |                                                         |                   | 66                                                                                                                        |  |
|                                                                                                                           |       |                         |                                                                                                  |                                                         |                   | 52                                                                                                                        |  |
|                                                                                                                           |       |                         |                                                                                                  |                                                         |                   | 43                                                                                                                        |  |
|                                                                                                                           | 60    |                         |                                                                                                  |                                                         | 6                 | 36                                                                                                                        |  |
| -60.9'                                                                                                                    |       |                         |                                                                                                  |                                                         |                   |                                                                                                                           |  |
|                                                                                                                           |       |                         | Bottom of Boring 60.9'                                                                           |                                                         |                   | BLOWS PER FOOT:                                                                                                           |  |
|                                                                                                                           |       |                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                         |                   | Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".                                             |  |

NO. 100, 317-430

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA.                                                                     |                              | SHEET 1<br>OF 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                   | 10. SIZE AND TYPE OF BIT<br>1 1/4" split spoon, 5/2" fishtail                                     |                              |                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X-854829 Y-762259 GA. EAST                                                           |              |                            |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                              |                                                                                                      |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                            |                              |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-236                                                            |              |                            |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6                                                   |                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED<br>0                                         |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                   | 14. TOTAL NUMBER CORE BOXES<br>0                                                                  |                              | 15. ELEVATION GROUND WATER<br>N/A                                                                    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                   | 16. DATE HOLE<br>13 FEB 92                                                                        |                              | 16. DATE HOLE<br>COMPLETED<br>13 FEB 92                                                              |  |
| 7. THICKNESS OF OVERBURDEN<br>59.9' (Water 44.9')                                                                            |              |                            |                                                   | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                 |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                              |                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE<br>59.9'                                                                                              |              |                            |                                                   |                                                                                                   |                              |                                                                                                      |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVERY<br>e                                                                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if slight load)<br>g            |  |
|                                                                                                                              |              |                            |                                                   |                                                                                                   |                              | BLOWS                                                                                                |  |
|                                                                                                                              |              |                            | Water                                             |                                                                                                   |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 45.5'.                                |  |
|                                                                                                                              |              |                            | Bottom of Harbor 44.9'                            |                                                                                                   |                              |                                                                                                      |  |
| -44.9'                                                                                                                       | 45           |                            | (MH) Very dark grey to black, clayey SILT.        |                                                                                                   | 1                            | Weight of rods drove split spoon from 44.9' to 45.7' for sample 2 taken from approx. 45.4' to 46.4'. |  |
| -45.4'                                                                                                                       |              |                            | (SC) Olive-grey, fine clayey SAND. Some silt.     |                                                                                                   | 2                            | 17                                                                                                   |  |
|                                                                                                                              |              |                            |                                                   |                                                                                                   | 3                            | 49                                                                                                   |  |
|                                                                                                                              |              |                            |                                                   |                                                                                                   |                              | 100/0.7                                                                                              |  |
| -50.9'                                                                                                                       | 50           |                            | Trace of silt.                                    |                                                                                                   | 4                            | 99                                                                                                   |  |
|                                                                                                                              |              |                            |                                                   |                                                                                                   |                              | 44                                                                                                   |  |
| -55.4'                                                                                                                       | 55           |                            |                                                   |                                                                                                   |                              | 33                                                                                                   |  |
|                                                                                                                              |              |                            | Dark olive-grey.                                  |                                                                                                   | 5                            | 48                                                                                                   |  |
|                                                                                                                              |              |                            |                                                   |                                                                                                   |                              | 30                                                                                                   |  |
| -59.9'                                                                                                                       | 60           |                            | Bottom of Boring 59.9'                            |                                                                                                   | 6                            | 26                                                                                                   |  |
|                                                                                                                              |              |                            |                                                   |                                                                                                   |                              | 33                                                                                                   |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                            |                                                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |                              |                                                                                                      |  |



17016 NO. SH-246

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA.                              |                              | SHEET 1<br>OF 2 SHEETS                          |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|---------------------------------------------------|------------------------------------------------------------|------------------------------|-------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                   | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5/2" fishtail |                              |                                                 |  |
| 2. LOCATION (Coordinates or Station)<br>X-858444 Y-766361 GA. EAST                                                           |             |                            |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW          |                              |                                                 |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314      |                              |                                                 |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-246                                                            |             |                            |                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                 |                              | DISTURBED : 4<br>UNDISTURBED : 0                |  |
| 5. NAME OF DRILLER<br>DOUGLAS LO ROCHE                                                                                       |             |                            |                                                   | 14. TOTAL NUMBER CORE BOXES 0                              |                              |                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                   | 15. ELEVATION GROUND WATER N/A                             |                              |                                                 |  |
| 7. THICKNESS OF OVERBURDEN 60.0'                                                                                             |             |                            |                                                   | 16. DATE HOLE                                              |                              | STARTED : 13 NOV 91<br>COMPLETED : 13 NOV 91    |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                   | 17. ELEVATION TOP OF HOLE 0.0'                             |                              |                                                 |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |             |                            |                                                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                     |                              |                                                 |  |
|                                                                                                                              |             |                            |                                                   | 19. SIGNATURE OF INSPECTOR<br>DAVID CHRIS LEETH, GEOLOGIST |                              |                                                 |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>s                | CLASSIFICATION OF MATERIALS<br>(Description)<br>s | % CORE<br>RECOV-<br>ERY                                    | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>weathering, etc. If significant<br>g |  |
|                                                                                                                              |             |                            | Water                                             |                                                            |                              |                                                 |  |
|                                                                                                                              | 5           |                            |                                                   |                                                            |                              |                                                 |  |
|                                                                                                                              | 10          |                            |                                                   |                                                            |                              |                                                 |  |
|                                                                                                                              | 15          |                            |                                                   |                                                            |                              |                                                 |  |
|                                                                                                                              | 20          |                            |                                                   |                                                            |                              |                                                 |  |
|                                                                                                                              | 25          |                            |                                                   |                                                            |                              |                                                 |  |
|                                                                                                                              | 30          |                            |                                                   |                                                            |                              |                                                 |  |
| -30.0'                                                                                                                       |             |                            | Continued on page 2                               |                                                            |                              |                                                 |  |

BLOWS

| DRILLING LOG (Con' sheet) |       | ELEVATION TOP OF HOLE 0.0' MLW |                                                                 | Hole No. SH-246           |                                |                                                                                     |       |
|---------------------------|-------|--------------------------------|-----------------------------------------------------------------|---------------------------|--------------------------------|-------------------------------------------------------------------------------------|-------|
| PROJECT                   |       | INSTALLATION                   |                                                                 | SHEET 2                   |                                |                                                                                     |       |
| SAVANNAH HARBOR DEEPENING |       | SAVANNAH, GA.                  |                                                                 | OF 2 SHEETS               |                                |                                                                                     |       |
| ELEVATION                 | DEPTH | LEGEND                         | CLASSIFICATION OF MATERIALS<br>(Description)                    | % CORE<br>RECOVER-<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant) | BLOWS |
| -30.0'                    | 30    | c                              |                                                                 |                           |                                |                                                                                     |       |
|                           | 35    |                                |                                                                 |                           |                                |                                                                                     |       |
|                           |       |                                | Bottom of Harbor 42.9'                                          |                           |                                |                                                                                     |       |
| -42.9'                    | 45    |                                | (MH) Green, fat SILT. Trace of mica. Dry,<br>mild organic odor. |                           | 1                              |                                                                                     | 26    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 39    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 50    |
| -49.0'                    | 50    |                                | 5-10% very fine sand in lenses.                                 |                           | 2                              |                                                                                     | 38    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 38    |
| -52.0'                    | 55    |                                | No sand.                                                        |                           | 3                              |                                                                                     | 34    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 47    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 49    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 35    |
|                           |       |                                |                                                                 |                           |                                |                                                                                     | 24    |
| -60.0'                    | 60    |                                | Bottom of Boring 60.0'                                          |                           | 4                              |                                                                                     | 37    |
|                           | 65    |                                |                                                                 |                           |                                |                                                                                     |       |

Hole No. SM-249

| DRILLING LOG                                                                                                                 |       | 0° 10' SOUTH ATLANTIC |                                                                                                            | INSTALLATION SAVANNAH, GA.                                                                        |                   | SHEET 1 OF 1 SHEETS                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                                                            | 10. SIZE AND TYPE OF BIT 1 3/8" split spoon, 5/8" fish tail                                       |                   |                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=860277 Y=765739 GA. EAST                                                           |       |                       |                                                                                                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                   |                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                       |                                                                                                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                            |                   |                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-249                                                            |       |                       |                                                                                                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                        |                   | 13. DISTURBED : 6<br>13. UNDISTURBED : 0                                         |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                       |                                                                                                            | 14. TOTAL NUMBER CORE BOXES 0                                                                     |                   |                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                                                            | 15. ELEVATION GROUND WATER N/A                                                                    |                   |                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 59.5' (WATER 45.5')                                                                               |       |                       |                                                                                                            | 16. DATE HOLE                                                                                     |                   | 16. STARTED : 24 MAR 92<br>16. COMPLETED : 24 MAR 92                             |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                       |                                                                                                            | 17. ELEVATION TOP OF HOLE 0.0'                                                                    |                   |                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.5'                                                                                                 |       |                       |                                                                                                            | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                          |                   |                                                                                  |  |
|                                                                                                                              |       |                       |                                                                                                            | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                   |                                                                                  |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Describe if necessary)                                                     | % CORE RECOVERY<br>JAP                                                                            | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. if significant) |  |
| 0.0'                                                                                                                         | 0     |                       |                                                                                                            |                                                                                                   |                   | BLOWS                                                                            |  |
|                                                                                                                              | 15    |                       | Water                                                                                                      |                                                                                                   |                   | Scale change at 45.0'.                                                           |  |
|                                                                                                                              | 35    |                       |                                                                                                            |                                                                                                   |                   | Set 6" diameter casing by own weight to 47.6'.                                   |  |
|                                                                                                                              | 40    |                       |                                                                                                            |                                                                                                   |                   |                                                                                  |  |
|                                                                                                                              | 45    |                       | Bottom of Harbor 45.5'                                                                                     |                                                                                                   |                   |                                                                                  |  |
| -45.5'                                                                                                                       | 45    |                       | (CH) Very dark grey to grey fat CLAY, some wood from approx. 47.0' to 47.5', trace of fine to coarse sand. |                                                                                                   | 1                 | Weight of rods drove split spoon from 45.5' to 47.5'. 0                          |  |
| -47.5'                                                                                                                       | 47.5  |                       | (SP) Grey fine to medium poorly graded SAND, some wood, trace of silt and mica.                            |                                                                                                   | 2                 | 17                                                                               |  |
|                                                                                                                              | 50    |                       | (SM) Grey medium to coarse silty SAND, some clay, trace of fine gravel.                                    |                                                                                                   | 3                 | 15                                                                               |  |
| -50.5'                                                                                                                       | 50    |                       | (CL) Olive-grey lean CLAY, some silt, trace of fine sand.                                                  |                                                                                                   | 4                 | 25                                                                               |  |
| -52.0'                                                                                                                       | 52    |                       | Trace of silt.                                                                                             |                                                                                                   | 5                 | 48                                                                               |  |
| -53.5'                                                                                                                       | 53.5  |                       | (SC) Olive-grey fine clayey SAND, trace of silt.                                                           |                                                                                                   | 6                 | 18                                                                               |  |
|                                                                                                                              | 55    |                       |                                                                                                            |                                                                                                   |                   | 30                                                                               |  |
|                                                                                                                              | 57    |                       |                                                                                                            |                                                                                                   |                   | 27                                                                               |  |
| -59.5'                                                                                                                       | 59.5  |                       | Bottom of Boring 59.5'                                                                                     |                                                                                                   |                   | 27                                                                               |  |
|                                                                                                                              | 60    |                       |                                                                                                            |                                                                                                   |                   |                                                                                  |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                       |                                                                                                            | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. split spoon w/140 lb. hammer falling 30". |                   |                                                                                  |  |

Hole No. SH-249A

| DRILLING LOG                                                                                                                 |       | DIRECTION SOUTH ATLANTIC |                                                                                        | INSTALLATION SAVANNAH, GA.                                                  |                   | SHEET 1<br>of 1 SHEETS                                                                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                          |                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/2" split spoon, 4 x 5/8" carbide bit        |                   |                                                                                                                                 |  |
| 2. LOCATION (Coordinates or Station)<br>X=860266 Y=765740 GA. EAST                                                           |       |                          |                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                           |                   |                                                                                                                                 |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                          |                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                      |                   |                                                                                                                                 |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-249A                                                           |       |                          |                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 0 UNDISTURBED : 0 |                   |                                                                                                                                 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                          |                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>1                                            |                   |                                                                                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                          |                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                                           |                   |                                                                                                                                 |  |
| 7. THICKNESS OF OVERBURDEN<br>60.3' (WATER 46.5')                                                                            |       |                          |                                                                                        | 16. DATE HOLE<br>STARTED : 24 MAR 92 COMPLETED : 24 MAR 92                  |                   |                                                                                                                                 |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                          |                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                                           |                   |                                                                                                                                 |  |
| 9. TOTAL DEPTH OF HOLE<br>60.3'                                                                                              |       |                          |                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>59 %                                  |                   |                                                                                                                                 |  |
|                                                                                                                              |       |                          |                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                            |                   |                                                                                                                                 |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                   | CLASSIFICATION OF MATERIALS<br>(Description)                                           | % CORE RECOVERY                                                             | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. If significant)                                                |  |
| 0.0                                                                                                                          | 0     |                          |                                                                                        | JAR                                                                         |                   | BLOWS                                                                                                                           |  |
|                                                                                                                              | 15    |                          | Water                                                                                  |                                                                             |                   | Scale change at 45.0'.<br>Set casing to 51.8'.                                                                                  |  |
|                                                                                                                              | 30    |                          |                                                                                        |                                                                             |                   |                                                                                                                                 |  |
|                                                                                                                              | 40    |                          |                                                                                        |                                                                             |                   |                                                                                                                                 |  |
|                                                                                                                              | 45    |                          | Bottom of Harbor 46.5'                                                                 |                                                                             |                   |                                                                                                                                 |  |
|                                                                                                                              | 50    |                          | Wash.                                                                                  |                                                                             |                   |                                                                                                                                 |  |
|                                                                                                                              | 52.0' |                          | Bottom of Wash 52.0'                                                                   |                                                                             |                   |                                                                                                                                 |  |
|                                                                                                                              | 53.3' |                          | (CL) Olive-grey lean CLAY, trace of fine sand.                                         |                                                                             |                   | Pull-1: 52.0'-55.5'<br>Run: 3.5', Rec.: 1.3', C. L.: 2.2'<br>Hyd. press: 75 psi<br>Drilling time: 24 min.<br>Rec.: 37%, Rqd.: 0 |  |
|                                                                                                                              | 55    |                          | Core loss.<br>(SC) Olive-grey fine clayey SAND, close to very close horizontal breaks. |                                                                             | BOX 1             | Pull-2: 55.5'-60.3'<br>Run: 4.8', Rec.: 3.6', C. L.: 1.2'<br>Hyd. press: 0 psi<br>Drilling time: 43 min.<br>Rec.: 75%, Rqd.: 17 |  |
|                                                                                                                              | 60    |                          | Core loss.                                                                             |                                                                             |                   |                                                                                                                                 |  |
|                                                                                                                              | 60.3' |                          | Bottom of Boring 60.3'                                                                 |                                                                             |                   |                                                                                                                                 |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                          |                                                                                        |                                                                             |                   |                                                                                                                                 |  |

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                  |                                      | SHEET 1<br>OF 1 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/8" splitspoon, 5 1/2" fishtail |                                      |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X=861860 Y=764479 GA. EAST                                                           |              |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW              |                                      |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314          |                                      |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-253                                                            |              |                            |                                                                                                        | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                 |                                      | DISTURBED<br>4<br>UNDISTURBED<br>0                                                                  |  |
| 5. NAME OF DRILLER<br>DOUGLAS LAROCHE                                                                                        |              |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                               |                                      |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                              |                                      |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (Water 45.2')                                                                            |              |                            |                                                                                                        | 16. DATE HOLE<br>STARTED<br>18 NOV 91                          |                                      | COMPLETED<br>18 NOV 91                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                              |                                      |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>60.0'                                                                                              |              |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                    |                                      |                                                                                                     |  |
|                                                                                                                              |              |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>David C. Leath                   |                                      |                                                                                                     |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOV-<br>ERY<br>e                                   | BOX OR<br>SAMPLE<br>NO.<br>JARR<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |  |
|                                                                                                                              |              |                            | Water                                                                                                  |                                                                |                                      | Scale change at 45.0'.                                                                              |  |
|                                                                                                                              |              |                            | Bottom of Harbor 45.2'                                                                                 |                                                                |                                      |                                                                                                     |  |
|                                                                                                                              |              |                            | (MH) Green, stiff, fat SILT. Trace of<br>sand, dry, mild odor.                                         |                                                                | 1                                    | 47                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                |                                      | 69                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                | 2                                    | 25                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                |                                      | 42                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                |                                      | 44                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                | 3                                    | 25                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                |                                      | 30                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                |                                      | 39                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                |                                      | 41                                                                                                  |  |
|                                                                                                                              |              |                            |                                                                                                        |                                                                | 4                                    | 54                                                                                                  |  |
|                                                                                                                              |              |                            | Bottom of Boring 60.0'                                                                                 |                                                                |                                      |                                                                                                     |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                |                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/8" I.D.<br>splitspoon w/140 lb. hammer falling 30". |  |

# SAVANNAH HARBOR BORING LOGS

From Station 24+000

To

Station 40+000

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic |                                                                                              | INSTALLATION<br>Savannah River, GA                |                              | Hole No. SH-52                                                                                      |  | SHEET<br>OF 2 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|--|----------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |             |                            |                                                                                              | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon     |                              |                                                                                                     |  |                      |  |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 36+000N. R= "12"                                                        |             |                            |                                                                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MLW)<br>MLW |                              |                                                                                                     |  |                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75 |                              |                                                                                                     |  |                      |  |
| 4. HOLE NO. (As shown on drawing title)<br>and file number SH-52                                                             |             |                            |                                                                                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN    |                              | DISTURBED<br>5                                                                                      |  | UNDISTURBED<br>0     |  |
| 5. NAME OF DRILLER<br>T. W. SCOTT                                                                                            |             |                            |                                                                                              | 14. TOTAL NUMBER CORE BOXES                       |                              |                                                                                                     |  |                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                              | 15. ELEVATION GROUND WATER                        |                              |                                                                                                     |  |                      |  |
| 7. THICKNESS OF OVERBURDEN 55.0'                                                                                             |             |                            |                                                                                              | 16. DATE HOLE STARTED 9 Feb 78 COMPLETED 9 Feb 78 |                              |                                                                                                     |  |                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                              | 17. ELEVATION TOP OF HOLE 0.0 MLW                 |                              |                                                                                                     |  |                      |  |
| 9. TOTAL DEPTH OF HOLE -55.0 MLW                                                                                             |             |                            |                                                                                              | 18. TOTAL CORE RECOVERY FOR BORING 1              |                              |                                                                                                     |  |                      |  |
|                                                                                                                              |             |                            |                                                                                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN  |                              |                                                                                                     |  |                      |  |
| ELEVATION<br>0.0 MLW                                                                                                         | DEPTH<br>0' | LEGEND<br>a                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                            | % CORE<br>RECOVERY<br>e                           | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g           |  |                      |  |
|                                                                                                                              | 5'          |                            | Water                                                                                        |                                                   |                              |                                                                                                     |  |                      |  |
|                                                                                                                              | 10'         |                            |                                                                                              |                                                   |                              |                                                                                                     |  |                      |  |
|                                                                                                                              | 15'         |                            | Bottom of river -16.0' MLW                                                                   |                                                   | JAR                          |                                                                                                     |  |                      |  |
| -16.0                                                                                                                        |             |                            | SM - Tan and gray silty<br>fine and medium sand                                              |                                                   | 1                            |                                                                                                     |  |                      |  |
|                                                                                                                              | 20'         |                            | Gray                                                                                         |                                                   |                              |                                                                                                     |  |                      |  |
|                                                                                                                              | 25'         |                            |                                                                                              |                                                   |                              |                                                                                                     |  |                      |  |
|                                                                                                                              | 30'         |                            | Continued on sheet 2                                                                         |                                                   | 2                            |                                                                                                     |  |                      |  |
| -30.0                                                                                                                        |             |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System |                                                   |                              | Blows Per Foot:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30' |  |                      |  |

| DRILLING LOG (Cont Sheet)          |              | TIDE TOP OF HOLE |                                                             | Hole No. SH-52         |                              |                                                                                           |
|------------------------------------|--------------|------------------|-------------------------------------------------------------|------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor         |              | 0.0 MLW          |                                                             | SHEET 2<br>OF 2 SHEETS |                              |                                                                                           |
| INSTALLATION<br>Savannah River, GA |              |                  |                                                             |                        |                              |                                                                                           |
| ELEVATION<br>a                     | DEPTH<br>30' | LEGEND<br>c      | CLASSIFICATION OF MATERIALS<br>(Description)<br>d           | % CORE<br>RECOV.<br>e  | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
| -34.0                              | 35'          |                  | SM - Gray silty fine and medium sand                        |                        |                              |                                                                                           |
| -42.0                              | 40'          |                  | GM - Gray silty coarse sand and gravel                      |                        | 3                            |                                                                                           |
| -55.0                              | 45'          |                  | CH - Dark green fat clay with some traces of very fine sand |                        | 4                            |                                                                                           |
|                                    | 50'          |                  |                                                             |                        | 5                            |                                                                                           |
|                                    | 55'          |                  | Bottom of hole -55.0' MLW                                   |                        |                              |                                                                                           |



Hole No. SB-53

| DRILLING LOG                                                                                         |       | DIVISION           |                                                                                                                                                  | INSTALLATION                               |                   | SHEET                                                                          |  |
|------------------------------------------------------------------------------------------------------|-------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| South Atlantic                                                                                       |       | Savannah River, GA |                                                                                                                                                  | OF 2 SHEETS                                |                   | 1                                                                              |  |
| 1. PROJECT                                                                                           |       |                    |                                                                                                                                                  | 10. SIZE AND TYPE OF BIT                   |                   |                                                                                |  |
| Savannah Harbor                                                                                      |       |                    |                                                                                                                                                  | 1 3/8" ID split spoon                      |                   |                                                                                |  |
| 2. LOCATION (Coordinate or Station)                                                                  |       |                    |                                                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM = MLW)  |                   |                                                                                |  |
| See Plan Sta 35+000N, R= "11"                                                                        |       |                    |                                                                                                                                                  | MLW                                        |                   |                                                                                |  |
| 3. DRILLING AGENCY                                                                                   |       |                    |                                                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   |                                                                                |  |
| Savannah District                                                                                    |       |                    |                                                                                                                                                  | CME 75                                     |                   |                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                              |       |                    |                                                                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                   | 14. TOTAL NUMBER CORE BOXES                                                    |  |
| SB-53                                                                                                |       |                    |                                                                                                                                                  | DISTURBED 4                                |                   | UNDISTURBED 0                                                                  |  |
| 5. NAME OF DRILLER                                                                                   |       |                    |                                                                                                                                                  | 15. ELEVATION GROUND WATER                 |                   |                                                                                |  |
| T. W. Scott                                                                                          |       |                    |                                                                                                                                                  |                                            |                   |                                                                                |  |
| 6. DIRECTION OF HOLE                                                                                 |       |                    |                                                                                                                                                  | 16. DATE HOLE                              |                   |                                                                                |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                    |                                                                                                                                                  | STARTED 10 Feb 78 COMPLETED 10 Feb 78      |                   |                                                                                |  |
| 7. THICKNESS OF OVERBURDEN 56.0'                                                                     |       |                    |                                                                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0 MLW          |                   |                                                                                |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                      |       |                    |                                                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING         |                   |                                                                                |  |
| 9. TOTAL DEPTH OF HOLE -56.0' MLW                                                                    |       |                    |                                                                                                                                                  | 19. SIGNATURE OF INSPECTOR                 |                   |                                                                                |  |
|                                                                                                      |       |                    |                                                                                                                                                  | CHARLES D. GRIFFIN                         |                   |                                                                                |  |
| ELEVATION                                                                                            | DEPTH | LEGEND             | CLASSIFICATION OF MATERIALS (Description)                                                                                                        | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of monitoring, etc., if significant) |  |
| 0.0 MLW                                                                                              | 0'    |                    |                                                                                                                                                  |                                            |                   |                                                                                |  |
|                                                                                                      | 5'    |                    | Water                                                                                                                                            |                                            |                   |                                                                                |  |
|                                                                                                      | 10'   |                    |                                                                                                                                                  |                                            |                   |                                                                                |  |
|                                                                                                      | 15'   |                    |                                                                                                                                                  |                                            |                   |                                                                                |  |
| -18.5                                                                                                |       |                    | Bottom of river -18.5' MLW                                                                                                                       |                                            | JAR               | Blows                                                                          |  |
|                                                                                                      | 20'   |                    | OH - Gray clayey silt and sand mixture, very soft, NOTE: Weight of hammer pushed rods with split spoon from -18.5' to 27.5'                      |                                            | 1                 | 0                                                                              |  |
|                                                                                                      | 25'   |                    |                                                                                                                                                  |                                            |                   | 0                                                                              |  |
|                                                                                                      |       |                    |                                                                                                                                                  |                                            |                   | 0                                                                              |  |
| -28.5                                                                                                |       |                    |                                                                                                                                                  |                                            |                   | 0                                                                              |  |
|                                                                                                      |       |                    |                                                                                                                                                  |                                            |                   | 0                                                                              |  |
| -30.0                                                                                                | 30'   |                    | SM - tan silty fine and medium sand Continued on sheet 2 NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                            | 2                 | 1                                                                              |  |
|                                                                                                      |       |                    |                                                                                                                                                  |                                            |                   | BLOWS PER FOOT:                                                                |  |
|                                                                                                      |       |                    |                                                                                                                                                  |                                            |                   | Number required to drive 1 3/8" ID split spoon w/ 140 lb hammer falling 30'    |  |

| DRILLING LOG (Cont Sheet) |       |        | FROM TOP OF HOLE                             |                         | Hole No.                        |                                                                                      | SH-53       |    |
|---------------------------|-------|--------|----------------------------------------------|-------------------------|---------------------------------|--------------------------------------------------------------------------------------|-------------|----|
| PROJECT                   |       |        | INSTALLATION                                 |                         | SHEET 2                         |                                                                                      | OF 2 SHEETS |    |
| Savannah Harbor           |       |        | Savannah River, GA                           |                         |                                 |                                                                                      |             |    |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>JAW.<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |             |    |
| a                         | 30'   | c      | d                                            | e                       | f                               | g                                                                                    |             |    |
|                           |       |        | SM - Tan silty fine and<br>medium sand       |                         |                                 |                                                                                      |             | 12 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 16 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 18 |
|                           | 35'   |        | Gray medium to coarse sand                   |                         |                                 |                                                                                      |             | 20 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 19 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 19 |
|                           | 40'   |        | Coarse silty sand with a fat<br>clay layer   |                         | 3                               |                                                                                      |             | 20 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 25 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 31 |
|                           | 45'   |        | Gray coarse sand                             |                         |                                 |                                                                                      |             | 40 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 44 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 51 |
| -49.5                     | 50'   |        | CH - Green fat clay                          |                         | 4                               |                                                                                      |             | 40 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 28 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 30 |
| -56.0                     | 55'   |        | Bottom of hole -56.0' MLW                    |                         |                                 |                                                                                      |             | 29 |
|                           |       |        |                                              |                         |                                 |                                                                                      |             | 36 |

Male No. SH-54

| DRILLING LOG                                                                                                           |       | DIVISION<br>South Atlantic | INSTALLATION<br>Savannah River, GA                                                        | SHEET 1<br>OF 2 SHEETS   |                         |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-------------------------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                          |       |                            | 10. SIZE AND TYPE OF BIT 3/8" ID SPOILSPOON                                               |                          |                         |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 34+000N, R= "10"                                                  |       |                            | 11. DATUM FOR ELEVATION SHOW (TBM or BENCH)<br>MLW                                        |                          |                         |                                                                                                     |
| 3. DRILLING AGENCY<br>Savannah District                                                                                |       |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                                         |                          |                         |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-54                                                       |       |                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 3 UNDISTURBED 0                   |                          |                         |                                                                                                     |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                      |       |                            | 14. TOTAL NUMBER CORE BOXES                                                               |                          |                         |                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED DEG. FROM VERT. |       |                            | 15. ELEVATION GROUND WATER                                                                |                          |                         |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                    |       |                            | 16. DATE HOLE<br>STARTED 5 Feb 78 COMPLETED 5 Feb 78                                      |                          |                         |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                     |       |                            | 17. ELEVATION TOP OF HOLE                                                                 |                          |                         |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE<br>55.0' MLW                                                                                    |       |                            | 18. TOTAL CORE RECOVERY FOR BORING                                                        |                          |                         |                                                                                                     |
|                                                                                                                        |       |                            | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                          |                          |                         |                                                                                                     |
| ELEVATION                                                                                                              | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                              | 1 CORE<br>RECOVER<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |
| 0.0 MLW                                                                                                                | 0'    |                            |                                                                                           |                          |                         |                                                                                                     |
|                                                                                                                        | 5'    |                            |                                                                                           |                          |                         |                                                                                                     |
|                                                                                                                        | 10'   |                            | Water                                                                                     |                          |                         |                                                                                                     |
|                                                                                                                        | 15'   |                            |                                                                                           |                          |                         |                                                                                                     |
|                                                                                                                        | 20'   |                            |                                                                                           |                          |                         |                                                                                                     |
|                                                                                                                        | 25'   |                            |                                                                                           |                          |                         |                                                                                                     |
|                                                                                                                        | 30'   |                            |                                                                                           |                          |                         |                                                                                                     |
| -30.0                                                                                                                  |       |                            | Continued on sheet 2                                                                      |                          |                         |                                                                                                     |
|                                                                                                                        |       |                            | NOTE: Soils field classified<br>in accordance with Unified<br>Soil Classification System. |                          |                         | BLOWS PER FOOT:<br>Number required to drive<br>3/8" ID spoils spoon w/<br>140 lb hammer falling 30" |

| DRILLING LOG (Cont Sheet) |       |        | TIDE TOP OF HOLE                             |                        | 0.0 MLW                 |                                                                                      | Hole No. SB-54 |  |
|---------------------------|-------|--------|----------------------------------------------|------------------------|-------------------------|--------------------------------------------------------------------------------------|----------------|--|
| OBJECT                    |       |        | INSTALLATION                                 |                        |                         | Savannah River, GA                                                                   |                |  |
| Javannah Harbor           |       |        |                                              |                        |                         | SHEET 2 OF 2 SHEETS                                                                  |                |  |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV.<br>BY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                |  |
| -30.0                     | 30'   | c      | d                                            | e                      | JAR                     | -g                                                                                   |                |  |
|                           |       |        | Water<br>Bottom of river -31.5' MLW          |                        |                         |                                                                                      |                |  |
|                           | 35'   |        | SM - Gray silty fine and<br>medium sand      |                        | 1                       | 10                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 12                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 19                                                                                   |                |  |
|                           |       |        | Medium sand with gravel                      |                        |                         | 24                                                                                   |                |  |
|                           | 40'   |        |                                              |                        |                         | 25                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 33                                                                                   |                |  |
| -43.5                     |       |        |                                              |                        |                         | 31                                                                                   |                |  |
|                           | 45'   |        | CH - Green fat clay                          |                        | 2                       | 40                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 20                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 19                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 1                                                                                    |                |  |
|                           | 50'   |        |                                              |                        |                         | 25                                                                                   |                |  |
|                           |       |        |                                              |                        | 3                       | 30                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 28                                                                                   |                |  |
| -55.5                     | 55'   |        | Bottom of hole -55.5' MLW                    |                        |                         | 33                                                                                   |                |  |
|                           |       |        |                                              |                        |                         | 40                                                                                   |                |  |

Hole No. SH-55

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                              | INSTALLATION<br>Savannah River, GA                                      |                         | SHEET 1<br>OF 2 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |                            |                                                                                              | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                           |                         |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>see Plan Sta 33+000, R= "10"                                                         |       |                            |                                                                                              | 11. DAY OF FOR ELEVATION SHOWN (TBM or MLW)<br>MLW                      |                         |                                                                                                     |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                       |                         |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and the number)<br>SH-55                                                              |       |                            |                                                                                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 4 UNDISTURBED 0 |                         |                                                                                                     |  |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |       |                            |                                                                                              | 14. TOTAL NUMBER CORE BOXES                                             |                         |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                              | 15. ELEVATION GROUND WATER                                              |                         |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |       |                            |                                                                                              | 16. DATE HOLE<br>STARTED 4 Feb 78 COMPLETED 4 Feb 78                    |                         |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                              | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                    |                         |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>55.0' MLW                                                                                          |       |                            |                                                                                              | 18. TOTAL CORE RECOVERY FOR BORING<br>1                                 |                         |                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                        |                         |                                                                                                     |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                 | SCORE<br>RECOVERY                                                       | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>penetration, etc., if significant)               |  |
| 0.0 MLW                                                                                                                      | 0'    |                            |                                                                                              |                                                                         |                         |                                                                                                     |  |
|                                                                                                                              | 5'    |                            |                                                                                              |                                                                         |                         |                                                                                                     |  |
|                                                                                                                              | 10'   |                            | Water                                                                                        |                                                                         |                         |                                                                                                     |  |
|                                                                                                                              | 15'   |                            |                                                                                              |                                                                         |                         |                                                                                                     |  |
|                                                                                                                              | 20'   |                            |                                                                                              |                                                                         |                         |                                                                                                     |  |
|                                                                                                                              | 25'   |                            |                                                                                              |                                                                         |                         |                                                                                                     |  |
| -29.5                                                                                                                        | 30'   |                            | Bottom of river -29.5' MLW                                                                   |                                                                         | JAR                     | B10                                                                                                 |  |
| -31.1                                                                                                                        |       |                            | SM-Gray fine silty soft sand<br>Continued on sheet 2                                         |                                                                         |                         |                                                                                                     |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System |                                                                         |                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30" |  |

| DRILLING LOG (Cont Sheet) |            | FROM TOP OF HOLE |                                                               | Hole No. SH-55        |                                |                                                                                           |
|---------------------------|------------|------------------|---------------------------------------------------------------|-----------------------|--------------------------------|-------------------------------------------------------------------------------------------|
| SUBJECT                   |            | INSTALLATION     |                                                               | SHEET 2 OF 2 SHEETS   |                                |                                                                                           |
| ELEVATION<br>a            | DEPTH<br>b | LEGEND<br>c      | CLASSIFICATION OF MATERIALS<br>(Description)<br>d             | % CORE<br>RECOV.<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f |
|                           | 306        |                  | SM-Dark gray fine silty<br>sand interbedded with soft<br>silt |                       | 1                              |                                                                                           |
|                           | 35'        |                  |                                                               |                       |                                |                                                                                           |
|                           | 40'        |                  | Fine and medium sand                                          |                       | 2                              |                                                                                           |
| -43.0                     |            |                  |                                                               |                       |                                |                                                                                           |
|                           | 45'        |                  | CH-Green fat clay                                             |                       | 3                              |                                                                                           |
|                           | 50'        |                  |                                                               |                       | 4                              |                                                                                           |
| -55.0                     | 55'        |                  | Bottom of hole -55.0' MLW                                     |                       |                                |                                                                                           |

| DRILLING LOG                                                                                                                 |       |        | DIVISION<br>South Atlantic                                                          |  | INSTALLATION<br>Savannah River, GA                                      |  | Hole No. SH-56<br>SHEET 1 OF 2 SHEETS                                                         |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |        | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID splitspoon                                    |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL)                              |  |                                                                                               |  |
| 2. LOCATION (Combination or Station)<br>See Plan Sta 32+000N. R= "10"                                                        |       |        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>MLW                                      |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 3 UNDISTURBED 0 |  |                                                                                               |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |        | 14. TOTAL NUMBER CORE BOXES                                                         |  | 15. ELEVATION GROUND WATER                                              |  |                                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-56                                                             |       |        | 16. DATE HOLE<br>STARTED 4 Feb 78 COMPLETED 4 Feb 78                                |  | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                    |  |                                                                                               |  |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |       |        | 18. TOTAL CORE RECOVERY FOR BORING                                                  |  | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. BRITTON                        |  |                                                                                               |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |        | 7. THICKNESS OF OVERBURDEN<br>55.0'                                                 |  | 8. DEPTH DRILLED INTO ROCK<br>0.0'                                      |  |                                                                                               |  |
| 9. TOTAL DEPTH OF HOLE<br>55.0' MLW                                                                                          |       |        | CLASSIFICATION OF MATERIALS (Description)                                           |  | SCORE RECOVERY                                                          |  | BOX OR SAMPLE NO.                                                                             |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND |                                                                                     |  |                                                                         |  | REMARKS (Drilling time, water loss, depth of overburden, etc., if significant)                |  |
| 0.0 MLW                                                                                                                      | 0'    | e      |                                                                                     |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              | 5'    |        |                                                                                     |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              | 10'   |        | Water                                                                               |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              | 15'   |        |                                                                                     |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              | 20'   |        |                                                                                     |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              | 25'   |        |                                                                                     |  |                                                                         |  |                                                                                               |  |
| -29.5                                                                                                                        | 30'   |        | Bottom of river -29.5' MLW                                                          |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              |       |        | SM - Tan & gray silty sand                                                          |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              |       |        | Continued on sheet 2                                                                |  |                                                                         |  |                                                                                               |  |
|                                                                                                                              |       |        | NOTE: Soils field classified in accordance with Unified Soil Classification System. |  |                                                                         |  | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30" |  |

| DRILLING LOG (Cont Sheet) |       |        | STATION TOP OF HOLE                                                    |                    | Hole No.                |                                                                                      |
|---------------------------|-------|--------|------------------------------------------------------------------------|--------------------|-------------------------|--------------------------------------------------------------------------------------|
| PROJECT                   |       |        | INSTALLATION                                                           |                    | SHEET                   |                                                                                      |
| Savannah Harbor           |       |        | Savannah River, GA                                                     |                    | 2                       |                                                                                      |
| ELEVATION                 | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                           | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| a                         | b     | c      | d                                                                      | e                  | f                       | g                                                                                    |
|                           | 30'   |        | SM - Tan and gray fine and medium silty sand with some pea size gravel |                    | 1                       | 10                                                                                   |
|                           |       |        |                                                                        |                    |                         | 14                                                                                   |
|                           | 35'   |        | Gray                                                                   |                    |                         | 19                                                                                   |
|                           |       |        |                                                                        |                    |                         | 25                                                                                   |
|                           | 40'   |        | Fine to medium sand with shell fragments                               |                    | 2                       | 31                                                                                   |
|                           |       |        |                                                                        |                    |                         | 36                                                                                   |
|                           | 45'   |        | Medium to coarse sand                                                  |                    |                         | 40                                                                                   |
|                           |       |        |                                                                        |                    |                         | 46                                                                                   |
|                           | 50'   |        | Medium to coarse sand and gravel with shell fragments                  |                    | 3                       | 58                                                                                   |
|                           |       |        |                                                                        |                    |                         | 71                                                                                   |
| -55.0                     | 55'   |        | Bottom of hole -55.0' MLW                                              |                    |                         | 68                                                                                   |
|                           |       |        |                                                                        |                    |                         | 5                                                                                    |
|                           |       |        |                                                                        |                    |                         | 40                                                                                   |
|                           |       |        |                                                                        |                    |                         | 31                                                                                   |
|                           |       |        |                                                                        |                    |                         | 29                                                                                   |
|                           |       |        |                                                                        |                    |                         | 41                                                                                   |
|                           |       |        |                                                                        |                    |                         | 37                                                                                   |



| DRILLING LOG                                                                                                                 |       | DIVISION       |                                                                                         | INSTALLATION                                      |                   | Hole No. SH-57                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------|---------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       | South Atlantic |                                                                                         | Savannah River, GA                                |                   | SHEET 1 OF 2 SHEETS                                                                           |  |
| 2. LOCATION (Coordinates or Address)<br>See Plan Sta 31+000N, R= 1490'                                                       |       |                |                                                                                         | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon     |                   |                                                                                               |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                |                                                                                         | 11. DATUM FOR ELEVATION MEASUREMENT<br>MLW        |                   |                                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-57                                                             |       |                |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CMP 75 |                   |                                                                                               |  |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |       |                |                                                                                         | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN         |                   | DISTURBED 3 UNDISTURBED 0                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                         | 14. TOTAL NUMBER CORE BOXES                       |                   |                                                                                               |  |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |       |                |                                                                                         | 15. ELEVATION GROUND WATER                        |                   |                                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                |                                                                                         | 16. DATE HOLE STARTED<br>3 Feb 78                 |                   | COMPLETED<br>3 Feb 78                                                                         |  |
| 9. TOTAL DEPTH OF HOLE<br>55.0' MLW                                                                                          |       |                |                                                                                         | 17. ELEVATION TOP OF HOLE<br>0.0 MLW              |                   |                                                                                               |  |
|                                                                                                                              |       |                |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING                |                   | 3                                                                                             |  |
|                                                                                                                              |       |                |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN  |                   |                                                                                               |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                                   | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant)               |  |
| 0.0 MLW                                                                                                                      | 0'    |                |                                                                                         |                                                   |                   |                                                                                               |  |
|                                                                                                                              | 5'    |                |                                                                                         |                                                   |                   |                                                                                               |  |
|                                                                                                                              | 10'   |                |                                                                                         |                                                   |                   |                                                                                               |  |
|                                                                                                                              | 15'   |                |                                                                                         |                                                   |                   |                                                                                               |  |
|                                                                                                                              | 20'   |                |                                                                                         |                                                   |                   |                                                                                               |  |
|                                                                                                                              | 25'   |                |                                                                                         |                                                   |                   |                                                                                               |  |
| -26.5                                                                                                                        |       |                | Bottom of River -26.5' MLW                                                              |                                                   | JAR               | Blows                                                                                         |  |
|                                                                                                                              |       |                | SM- Gray and tan fine to medium silty sand                                              |                                                   | 1                 | 17                                                                                            |  |
| -30.0                                                                                                                        | 30'   |                | Continued on sheet 2                                                                    |                                                   |                   |                                                                                               |  |
|                                                                                                                              |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                   |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30' |  |

| DRILLING LOG (Cont Sheet) |              | FROM TOP OF HOLE   |                                                   | Hole No. SH-57          |                              |                                                                                         |
|---------------------------|--------------|--------------------|---------------------------------------------------|-------------------------|------------------------------|-----------------------------------------------------------------------------------------|
| Savannah Harbor           |              | Savannah River, GA |                                                   | SHEET 2 OF 2 SHEETS     |                              |                                                                                         |
| ELEVATION<br>a            | DEPTH<br>30' | LEGEND<br>c        | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>unboring, etc., if significant)<br>g |
|                           |              |                    | SM - Gray and tan fine to<br>medium silty sand    |                         |                              | 45                                                                                      |
|                           |              |                    | Medium to coarse sand                             |                         |                              | 44                                                                                      |
|                           | 35'          |                    |                                                   |                         |                              | 51                                                                                      |
| -37.0                     |              |                    |                                                   |                         |                              | 50                                                                                      |
|                           |              |                    |                                                   |                         |                              | 61                                                                                      |
|                           | 40'          |                    | CH - Green fat clay                               |                         | 2                            | 11                                                                                      |
|                           |              |                    |                                                   |                         |                              | 14                                                                                      |
|                           |              |                    |                                                   |                         |                              | 19                                                                                      |
|                           | 45'          |                    |                                                   |                         |                              | 21                                                                                      |
|                           |              |                    |                                                   |                         |                              | 27                                                                                      |
|                           |              |                    |                                                   |                         |                              | 20                                                                                      |
|                           | 50'          |                    |                                                   |                         | 3                            | 24                                                                                      |
|                           |              |                    |                                                   |                         |                              | 2                                                                                       |
|                           |              |                    |                                                   |                         |                              | 28                                                                                      |
|                           |              |                    | with traces of fine sand and<br>mica              |                         |                              | 27                                                                                      |
| -55.0                     | 55'          |                    |                                                   |                         |                              | 29                                                                                      |
|                           |              |                    | Bottom of hole -55.0' MLW                         |                         |                              | 25                                                                                      |

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic                                                          | INSTALLATION<br>Savannah River, GA                                      |                                                                                               | Hole No. SH-58<br>SHEET 1<br>OF 3 SHEETS |                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor<br>LOCATION (Coordinate or Station)<br>Sta 27+300S, R= 19"                                     |            |                                                                                     | 10. SIZE AND TYPE OF BIT 1 3/8" ID SPLITSPoon                           |                                                                                               |                                          |                                                                                           |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                                                                                     | 11. DATUM FOR ELEVATION SHOWN (FTM or MLW)<br>MLW                       |                                                                                               |                                          |                                                                                           |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-58                                                             |            |                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                       |                                                                                               |                                          |                                                                                           |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |            |                                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 4 UNDISTURBED 0 |                                                                                               |                                          |                                                                                           |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                                                                                     | 14. TOTAL NUMBER CORE BOXES                                             |                                                                                               |                                          |                                                                                           |
| 7. THICKNESS OF OVERBURDEN 55.5'                                                                                             |            |                                                                                     | 15. ELEVATION GROUND WATER                                              |                                                                                               |                                          |                                                                                           |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                                                                                     | 16. DATE HOLE STARTED 80 Jan 77 COMPLETED 30 Jan 77                     |                                                                                               |                                          |                                                                                           |
| 9. TOTAL DEPTH OF HOLE -55.5' MLW                                                                                            |            |                                                                                     | 17. ELEVATION TOP OF HOLE 0.0 MLW                                       |                                                                                               |                                          |                                                                                           |
|                                                                                                                              |            |                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING                                      |                                                                                               |                                          |                                                                                           |
|                                                                                                                              |            |                                                                                     | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                        |                                                                                               |                                          |                                                                                           |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c                                                                         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                       | 1. CORE<br>RECOV-<br>ERY<br>e                                                                 | BOX OR<br>SAMPLE<br>NO.<br>f             | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
| 0'                                                                                                                           |            |                                                                                     |                                                                         |                                                                                               |                                          |                                                                                           |
| 5'                                                                                                                           |            |                                                                                     | Water                                                                   |                                                                                               |                                          |                                                                                           |
| 10'                                                                                                                          |            |                                                                                     |                                                                         |                                                                                               |                                          |                                                                                           |
| 15'                                                                                                                          |            |                                                                                     |                                                                         |                                                                                               |                                          |                                                                                           |
| 20'                                                                                                                          |            |                                                                                     |                                                                         |                                                                                               |                                          |                                                                                           |
| 25'                                                                                                                          |            |                                                                                     |                                                                         |                                                                                               |                                          |                                                                                           |
| 27.0'                                                                                                                        |            |                                                                                     | Bottom of river -27.0' MLW                                              |                                                                                               | JAR                                      | BLOWS                                                                                     |
| 28.0'                                                                                                                        |            |  | CH - Green fat clay                                                     |                                                                                               | 1                                        | 4                                                                                         |
| 30.0'                                                                                                                        |            |                                                                                     | Continued on sheet 2                                                    |                                                                                               |                                          | 7                                                                                         |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System                                       |            |                                                                                     |                                                                         | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30" |                                          |                                                                                           |

| DRILLING LOG (Cont Sheet) |       | FROM TOP OF HOLE                                                                  |                                              | 0.0 MLW                 |                                | Hole No. SH-58                                                                       |                                 |
|---------------------------|-------|-----------------------------------------------------------------------------------|----------------------------------------------|-------------------------|--------------------------------|--------------------------------------------------------------------------------------|---------------------------------|
| PROJECT                   |       | Savannah Harbor                                                                   |                                              | INSTALLATION            |                                | Savannah River, GA                                                                   |                                 |
| SHEET                     |       | OF 2                                                                              |                                              | SHEETS                  |                                | 2                                                                                    |                                 |
| ELEVATION                 | DEPTH | LEGEND                                                                            | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV.<br>ERY | BOX OR<br>SAMPLE<br>NO.<br>J&R | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |                                 |
| a                         | b     | c                                                                                 | d                                            | e                       | f                              | g                                                                                    | BLOWS                           |
|                           | 30'   |  | CH - Green fat clay                          |                         |                                |                                                                                      | 18'                             |
|                           | 35'   |  | SM - Gray medium and coarse<br>silty sand    |                         | 2                              |                                                                                      | 18'<br>21'<br>20'<br>20'<br>31' |
|                           | 40'   |                                                                                   | Medium silty sand                            |                         |                                |                                                                                      | 38'                             |
|                           | 45'   |                                                                                   |                                              |                         |                                |                                                                                      | 60'<br>61'                      |
|                           | 50'   |  | CH - Green hard clay                         |                         | 3                              |                                                                                      | 49'<br>60'<br>63'<br>71'        |
|                           | 55'   |                                                                                   |                                              |                         | 4                              |                                                                                      | 82'<br>79'<br>80'               |
|                           |       |                                                                                   | Bottom of hole - 55.5' MLW                   |                         |                                |                                                                                      |                                 |

| DRILLING LOG                                            |       | DIVISION       | INSTALLATION                                                                            |                 | Hole No. SH-59      |                                                                                               |
|---------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------|-----------------|---------------------|-----------------------------------------------------------------------------------------------|
| 1. PROJECT                                              |       | South Atlantic | Savannah River, GA                                                                      |                 | SHEET 1 OF 2 SHEETS |                                                                                               |
| 2. LOCATION (Coordinates or Station)                    |       |                | 10. SIZE AND TYPE OF BIT: 1 3/8" ID splitspoon                                          |                 |                     |                                                                                               |
| 3. DRILLING AGENCY                                      |       |                | 11. DAY OF YEAR FOR ELEVATION SHOWN (TBM or MLW)                                        |                 |                     |                                                                                               |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-59          | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                 |                 |                     |                                                                                               |
| 5. NAME OF DRILLER                                      |       |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                               |                 |                     |                                                                                               |
| 6. DIRECTION OF HOLE                                    |       |                | 14. TOTAL NUMBER CORE BOXES                                                             |                 |                     |                                                                                               |
| 7. THICKNESS OF OVERBURDEN                              |       | 56.0'          | 15. ELEVATION GROUND WATER                                                              |                 |                     |                                                                                               |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'           | 16. DATE HOLE                                                                           |                 |                     |                                                                                               |
| 9. TOTAL DEPTH OF HOLE                                  |       | -56.0'         | 17. ELEVATION TOP OF HOLE                                                               |                 |                     |                                                                                               |
|                                                         |       |                | 18. TOTAL CORE RECOVERY FOR BORING                                                      |                 |                     |                                                                                               |
|                                                         |       |                | 19. SIGNATURE OF INSPECTOR                                                              |                 |                     |                                                                                               |
|                                                         |       |                | CHARLES D. GRIFFIN                                                                      |                 |                     |                                                                                               |
| ELEVATION                                               | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY | BOX OR SAMPLE NO.   | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                |
| 0'                                                      | 0'    |                |                                                                                         |                 |                     |                                                                                               |
|                                                         | 5'    |                | Water                                                                                   |                 |                     |                                                                                               |
|                                                         | 10'   |                |                                                                                         |                 |                     |                                                                                               |
|                                                         | 15'   |                |                                                                                         |                 |                     |                                                                                               |
|                                                         | 20'   |                |                                                                                         |                 |                     |                                                                                               |
|                                                         | 25'   |                | Bottom of river -26.0' MLW                                                              |                 | JAR                 | BLOWS                                                                                         |
|                                                         | 30'   |                | SM - Gray and tan fine and medium silty sand                                            |                 | 1                   | 10                                                                                            |
|                                                         |       |                | Continued on sheet 2                                                                    |                 |                     | 1                                                                                             |
|                                                         |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                 |                     | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/ 140 lb hammer falling 30' |

| DRILLING LOG (Cont Sheet) |  | FROM TOP OF HOLE |  | 0.0 MLW      |  | Hole No. SH-59              |  |
|---------------------------|--|------------------|--|--------------|--|-----------------------------|--|
| PROJECT                   |  | Savannah Harbor  |  | INSTALLATION |  | Savannah River, GA          |  |
| ELEVATION                 |  | DEPTH            |  | LEGEND       |  | CLASSIFICATION OF MATERIALS |  |
| a                         |  | 30'              |  | c            |  | d                           |  |
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| DRILLING LOG                                            |  | DIVISION                                                                                             | INSTALLATION | HAIR No.            | SH-79 |
|---------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|--------------|---------------------|-------|
| 1. PROJECT                                              |  | South Atlantic                                                                                       | Savannah GA  | SHEET 1 OF 1 SHEETS |       |
| 2. LOCATION (Coordinates or Station)                    |  | Savannah Harbor Comprehensive Study                                                                  |              |                     |       |
| 3. LOCATION (Coordinates or Station)                    |  | X-872.025, Y-756.210 (off-set 60' N)                                                                 |              |                     |       |
| 4. DRILLING AGENCY                                      |  | Savannah District                                                                                    |              |                     |       |
| 5. HOLE NO. (As shown on drawing title and file number) |  | SH-79                                                                                                |              |                     |       |
| 6. NAME OF DRILLER                                      |  | T.W. Scott                                                                                           |              |                     |       |
| 7. DIRECTION OF HOLE                                    |  | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                     |       |
| 8. THICKNESS OF OVERBURDEN                              |  | 51.2' +                                                                                              |              |                     |       |
| 9. DEPTH DRILLED INTO ROCK                              |  | 0.0'                                                                                                 |              |                     |       |
| 10. TOTAL DEPTH OF HOLE                                 |  | 51.2'                                                                                                |              |                     |       |
| 11. SIZE AND TYPE OF BIT                                |  | 3/8" I.D. Splitspoon, 5"                                                                             |              |                     |       |
| 12. DAY ON FOR ELEVATION SHOWN (TBM or MSL)             |  | Fishtail                                                                                             |              |                     |       |
| 13. MANUFACTURER'S DESIGNATION OF DRILL                 |  | MLW                                                                                                  |              |                     |       |
| 14. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN               |  | DISTURBED                                                                                            |              | UNDISTURBED         |       |
| 15. TOTAL NUMBER CORE BOXES                             |  | 4                                                                                                    |              |                     |       |
| 16. ELEVATION GROUND WATER                              |  |                                                                                                      |              |                     |       |
| 17. DATE HOLE                                           |  | STARTED                                                                                              |              | COMPLETED           |       |
| 18. ELEVATION TOP OF HOLE                               |  | 9 Nov 82                                                                                             |              | 9 Nov 82            |       |
| 19. TOTAL CORE RECOVERY FOR BORING                      |  | 0.0' MLW                                                                                             |              |                     |       |
| 20. SIGNATURE OF INSPECTOR                              |  | James Arthur, Geologist                                                                              |              |                     |       |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                |
|-----------|-------|--------|-----------------------------------------------------------------------------------------|-----------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0         | 0     |        |                                                                                         |                 |                   |                                                                                                                                                                               |
|           | 35    |        | Water                                                                                   |                 |                   | Note: Water depth was determined by length of drill rods and maybe less than shown due to rods sinking through soft material. Strong currents prevented use of weighted tape. |
| -37.5'    |       |        | Bottom of Harbor 37.5'                                                                  |                 |                   |                                                                                                                                                                               |
|           | 40    |        | MH-Grayish green plastic silt                                                           |                 | 1                 |                                                                                                                                                                               |
| -42.2'    |       |        | Green, clayey, compact                                                                  |                 | 2                 | Note: 35.0' scale of change. 37.5' to 42.2' weight of hammer drove splitspoon.                                                                                                |
| -45.2'    | 45    |        | With trace of fine sand                                                                 |                 | 3                 |                                                                                                                                                                               |
| -48.2'    |       |        | With some thin gray streaks of fine sand                                                |                 |                   |                                                                                                                                                                               |
| -49.7'    | 50    |        | With increase in fine sand.                                                             |                 | 4                 |                                                                                                                                                                               |
| -51.2'    |       |        | Bottom of Hole: 51.2'                                                                   |                 |                   |                                                                                                                                                                               |
|           |       |        | Note: Soils field classified in accordance with the Unified Soil Classification System. |                 |                   | Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".                                                                                   |

Hole No. SH-260

|                                                                                                                              |  |                                      |  |                                                                     |  |                                                                         |  |
|------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------|--|---------------------------------------------------------------------|--|-------------------------------------------------------------------------|--|
| DIVISION<br><b>SOUTH ATLANTIC</b>                                                                                            |  | INSTALLATION<br><b>SAVANNAH, GA.</b> |  | PROJECT NO. <b>SH-260</b>                                           |  | SHEET 1<br>OF 1 SHEETS                                                  |  |
| 1. PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                               |  |                                      |  | 10. SIZE AND TYPE OF BIT <b>1 3/8" split spoon, 5 1/2" fishtail</b> |  |                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br><b>X-864460 Y-761346 GA. EAST</b>                                                    |  |                                      |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>            |  |                                                                         |  |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |  |                                      |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>Failing 314</b>       |  |                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>SH-260</b>                                                     |  |                                      |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br><b>7</b>              |  | DISTURBED<br><b>0</b>                                                   |  |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |  |                                      |  | 14. TOTAL NUMBER CORE BOXES<br><b>0</b>                             |  | UNDISTURBED<br><b>0</b>                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                                      |  | 15. ELEVATION GROUND WATER <b>N/A</b>                               |  | 16. DATE HOLE<br>STARTED <b>23 NOV 91</b><br>COMPLETED <b>23 NOV 91</b> |  |
| 7. THICKNESS OF OVERBURDEN <b>60.1' (Water 39.9')</b>                                                                        |  |                                      |  | 17. ELEVATION TOP OF HOLE <b>0.0'</b>                               |  | 18. TOTAL CORE RECOVERY FOR BORING <b>N/A</b>                           |  |
| 8. DEPTH DRILLED INTO ROCK <b>0.0'</b>                                                                                       |  |                                      |  | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>             |  |                                                                         |  |
| 9. TOTAL DEPTH OF HOLE <b>60.1'</b>                                                                                          |  |                                      |  |                                                                     |  |                                                                         |  |

| ELEVATION | DEPTH | LEGEND                                                                              | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                 |
|-----------|-------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------|-------------------|---------------------------------------------------------------------------------------------------|
| 0+0       | 0     |                                                                                     |                                                                                                  |                 |                   |                                                                                                   |
|           |       |                                                                                     | Water                                                                                            |                 |                   |                                                                                                   |
|           | 35    |                                                                                     |                                                                                                  |                 |                   | Scale change at 35.0'. Set 6" diameter casing by own weight to 46.7'.                             |
| -39.9'    | 40    |    | (MH) Dark gray to black, clayey SILT. Trace at fine to coarse sand.                              |                 | 1                 | Weight of rod drove split spoon from 39.9' to 46.6'. <span style="float: right;">0</span>         |
|           | 45    |                                                                                     |                                                                                                  |                 |                   |                                                                                                   |
| -46.1'    |       |   | (SC) Olive-grey, fine clayey SAND. Some silt.                                                    |                 | 2                 |                                                                                                   |
|           | 50    |                                                                                     |                                                                                                  |                 | 3                 |                                                                                                   |
|           | 55    |                                                                                     |                                                                                                  |                 | 4                 |                                                                                                   |
| -57.1'    |       |  | (CL) Olive-grey, silty lean CLAY. Some fine sand. Trace of fine sand.                            |                 | 5                 |                                                                                                   |
|           | 60    |                                                                                     |                                                                                                  |                 | 6                 |                                                                                                   |
| -60.1'    |       |                                                                                     |                                                                                                  |                 | 7                 |                                                                                                   |
|           |       |                                                                                     | Bottom of Boring 60.1'                                                                           |                 |                   |                                                                                                   |
|           |       |                                                                                     | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                 |                   |                                                                                                   |
|           |       |                                                                                     |                                                                                                  |                 |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. split spoon w/140 lb. hammer falling 30". |



| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC                                                              |                                                                                                  | Hole No. <b>SH-266</b>       |                                     |                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                               |             | INSTALLATION<br><b>SAVANNAH, GA.</b>                                                    |                                                                                                  | SHEET 1<br>OF 1 SHEETS       |                                     |                                                                                                                                 |
| 2. LOCATION (Coordinates or Station)<br><b>X=865516 Y=758723 GA. EAST</b>                                                    |             | 10. SIZE AND TYPE OF BIT <b>1 1/2" SPLITSPOON, 5/8" FISHTAIL</b>                        |                                                                                                  |                              |                                     |                                                                                                                                 |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |             | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                                |                                                                                                  |                              |                                     |                                                                                                                                 |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>SH-266</b>                                                     |             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>Failing 314</b>                           |                                                                                                  |                              |                                     |                                                                                                                                 |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |             | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: <b>6</b> UNDISTURBED: <b>0</b> |                                                                                                  |                              |                                     |                                                                                                                                 |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             | 14. TOTAL NUMBER CORE BOXES <b>0</b>                                                    |                                                                                                  |                              |                                     |                                                                                                                                 |
| 7. THICKNESS OF OVERBURDEN <b>59.8' (Water 38.8')</b>                                                                        |             | 15. ELEVATION GROUND WATER <b>N/A</b>                                                   |                                                                                                  |                              |                                     |                                                                                                                                 |
| 8. DEPTH DRILLED INTO ROCK <b>0.0'</b>                                                                                       |             | 16. DATE HOLE<br>STARTED: <b>18 JAN 92</b> COMPLETED: <b>18 JAN 92</b>                  |                                                                                                  |                              |                                     |                                                                                                                                 |
| 9. TOTAL DEPTH OF HOLE <b>59.8'</b>                                                                                          |             | 17. ELEVATION TOP OF HOLE <b>0.0'</b>                                                   |                                                                                                  |                              |                                     |                                                                                                                                 |
|                                                                                                                              |             | 18. TOTAL CORE RECOVERY FOR BORING <b>N/A</b> <span style="float: right;">X</span>      |                                                                                                  |                              |                                     |                                                                                                                                 |
|                                                                                                                              |             | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>                                 |                                                                                                  |                              |                                     |                                                                                                                                 |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>c                                                                             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                       |
|                                                                                                                              | 35          |                                                                                         | Water                                                                                            |                              |                                     | BLOWS                                                                                                                           |
|                                                                                                                              | -38.8'      |                                                                                         | Bottom of Harbor 38.8'                                                                           |                              |                                     | Scale change at 35.0'. Set 5" diameter casing by own weight to 48.6'.                                                           |
|                                                                                                                              | 40          |                                                                                         | (Mlt) Dark gray to black clayey SILT.                                                            |                              | 1                                   | Weight of hammer drove splitspoon from -38.8' to 47.8'.<br>Jar sample 2 at change of material from approx. 47.2' to 47.8'.<br>0 |
|                                                                                                                              | 45          |                                                                                         | (CH) Olive-grey fat CLAY. Trace of silt.                                                         |                              | 2                                   |                                                                                                                                 |
|                                                                                                                              | -47.2'      |                                                                                         |                                                                                                  |                              | 3                                   |                                                                                                                                 |
|                                                                                                                              | -49.3'      |                                                                                         | Trace of fine sand.                                                                              |                              |                                     |                                                                                                                                 |
|                                                                                                                              | 50          |                                                                                         |                                                                                                  |                              |                                     |                                                                                                                                 |
|                                                                                                                              | 55          |                                                                                         | Some silt.                                                                                       |                              | 4                                   |                                                                                                                                 |
|                                                                                                                              | -55.3'      |                                                                                         |                                                                                                  |                              |                                     |                                                                                                                                 |
|                                                                                                                              | 60          |                                                                                         |                                                                                                  |                              | 5                                   |                                                                                                                                 |
|                                                                                                                              | -59.8'      |                                                                                         |                                                                                                  |                              | 6                                   |                                                                                                                                 |
|                                                                                                                              |             |                                                                                         | Bottom of Boring 59.8'                                                                           |                              |                                     |                                                                                                                                 |
|                                                                                                                              |             |                                                                                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                              |                                     | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".                                |

| DRILLING LOG                                                                                                                 |              | DIRECTION SOUTH ATLANTIC                                                           |                                                       | INSTALLATION SAVANNAH, GA.                                |                                  | HOLE NO. SH-207                                                                                |  | SHEET 1 OF 1 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------|--|---------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                         |              |                                                                                    |                                                       | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 3/2" FISHTAIL |                                  |                                                                                                |  |                     |  |
| 2. LOCATION (Coordinates or Station) X-866086 Y-758441 GA. EAST                                                              |              |                                                                                    |                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW            |                                  |                                                                                                |  |                     |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                         |              |                                                                                    |                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314       |                                  |                                                                                                |  |                     |  |
| 4. HOLE NO. (As shown on drawing title and title number) SH-267                                                              |              |                                                                                    |                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                  | DISTURBED 6                                                                                    |  | UNDISTURBED 0       |  |
| 5. NAME OF DRILLER DOUGLAS LOROCHE                                                                                           |              |                                                                                    |                                                       | 14. TOTAL NUMBER CORE BOXES                               |                                  | 0                                                                                              |  |                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                                                                                    |                                                       | 15. ELEVATION GROUND WATER N/A                            |                                  |                                                                                                |  |                     |  |
| 7. THICKNESS OF OVERBURDEN 59.6 (Water 43.1')                                                                                |              |                                                                                    |                                                       | 16. DATE HOLE                                             |                                  | STARTED 8 JAN 92                                                                               |  | COMPLETED 8 JAN 92  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                                                                                    |                                                       | 17. ELEVATION TOP OF HOLE                                 |                                  | 0.0'                                                                                           |  |                     |  |
| 9. TOTAL DEPTH OF HOLE 59.6'                                                                                                 |              |                                                                                    |                                                       | 18. TOTAL CORE RECOVERY FOR BORING                        |                                  | N/A                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.             |                                  |                                                                                                |  |                     |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>*                                                                        | CLASSIFICATION OF MATERIALS<br>(Description)<br>#     | % CORE<br>RECOVER-<br>ERY<br>%                            | BOX OR<br>SAMPLE<br>NO.<br>(JAR) | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g BLOWS |  |                     |  |
| 40                                                                                                                           |              |                                                                                    | Water                                                 |                                                           |                                  | Scale change at 40.0'. Set 6" diameter casing by own weight to 49.6'.                          |  |                     |  |
| -43.1'                                                                                                                       |              |                                                                                    | Bottom of Harbor 43.1'                                |                                                           |                                  |                                                                                                |  |                     |  |
|                                                                                                                              | 45           |   | (MH) Dark grey to black clayey SILT.                  |                                                           | 1                                | Weight of rods drove splitspoon to 46.9'. Cont'd. drive to 47.6' w/ four blows. 0              |  |                     |  |
| -46.5'                                                                                                                       |              |   | Layer of coarse sand.                                 |                                                           | 2                                |                                                                                                |  |                     |  |
| -46.7'                                                                                                                       |              |  | (CH) Olive-grey, fol CLAY. Trace of fine sand & silt. |                                                           | 3                                |                                                                                                |  |                     |  |
|                                                                                                                              | 50           |                                                                                    |                                                       |                                                           | 4                                | Jar Sample #2 taken at material change from approx. 46.7' to 47.6'. 4                          |  |                     |  |
|                                                                                                                              | 55           |                                                                                    |                                                       |                                                           | 5                                | 10                                                                                             |  |                     |  |
|                                                                                                                              | 60           |                                                                                    |                                                       |                                                           | 6                                | 14                                                                                             |  |                     |  |
| -59.6'                                                                                                                       |              |                                                                                    | Bottom of Boring 59.6'                                |                                                           |                                  | 18                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 22                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 26                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 30                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 34                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 38                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 42                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 46                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 50                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 54                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 58                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 62                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 66                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 70                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 74                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 78                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 82                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 86                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 90                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 94                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 98                                                                                             |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 102                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 106                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 110                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 114                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 118                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 122                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 126                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 130                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 134                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 138                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 142                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 146                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 150                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 154                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 158                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 162                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 166                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 170                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 174                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 178                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 182                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 186                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 190                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 194                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 198                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 202                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 206                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 210                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 214                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  | 218                                                                                            |  |                     |  |
|                                                                                                                              |              |                                                                                    |                                                       |                                                           |                                  |                                                                                                |  |                     |  |

FIGURE NO. SH 260

|                                                                                                                              |  |                            |  |                                                                 |  |                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|-----------------------------------------------------------------|--|------------------------------------|--|
| DRILLING LOG                                                                                                                 |  | DIVISION<br>SOUTH ATLANTIC |  | INSTALLATION<br>SAVANNAH, GA.                                   |  | SHEET 1<br>OF 1 SHEETS             |  |
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |  |                            |  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL    |  |                                    |  |
| 2. LOCATION (Coordinates or Station)<br>X=866693 Y=757588 GA. EAST                                                           |  |                            |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW               |  |                                    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |  |                            |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314          |  |                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-268                                                            |  |                            |  | BURDEN SAMPLES TAKEN                                            |  | DISTURBED<br>4<br>UNDISTURBED<br>0 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |  |                            |  | 14. TOTAL NUMBER CORE BOXES<br>0                                |  |                                    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                            |  | 15. ELEVATION GROUND WATER<br>N/A                               |  |                                    |  |
| 7. THICKNESS OF OVERBURDEN<br>60.0' (Water 43.0')                                                                            |  |                            |  | 16. DATE HOLE<br>STARTED<br>14 NOV 91<br>COMPLETED<br>14 NOV 91 |  |                                    |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |  |                            |  | 17. ELEVATION TOP OF HOLE<br>0.0'                               |  |                                    |  |
| 9. TOTAL DEPTH OF HOLE<br>60.05'                                                                                             |  |                            |  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                       |  |                                    |  |
|                                                                                                                              |  |                            |  | 19. SIGNATURE OF INSPECTOR<br>DAVID CHRIS LEETH, Geologist      |  |                                    |  |

| ELEVATION<br>0.0 | DEPTH<br>0 | LEGEND<br>. | CLASSIFICATION OF MATERIALS<br>(Description)<br>.                                                | % CORE<br>RECOVER-<br>ERY<br>. | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>.        | BLOWS |
|------------------|------------|-------------|--------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|-------|
|                  |            |             | Water                                                                                            |                                |                                |                                                                                                  |       |
|                  | 40         |             |                                                                                                  |                                |                                |                                                                                                  |       |
|                  |            |             | Bottom of Harbor 43.0'                                                                           |                                |                                |                                                                                                  |       |
| -43.0'           |            | o o o       | (SW) Gray, fine to large grained, well graded SAND. Saturated, no odor.                          |                                | 1                              |                                                                                                  | 20    |
| -44.5'           | 45         |             | (MH) Green, fat SILT. Some clay. Dry, mild organic odor.                                         |                                | 2                              |                                                                                                  | 10    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 36    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 15    |
| -50.0'           | 50         |             |                                                                                                  |                                | 3                              |                                                                                                  | 22    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 21    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 22    |
|                  | 55         |             |                                                                                                  |                                |                                |                                                                                                  | 19    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 14    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 17    |
|                  |            |             |                                                                                                  |                                |                                |                                                                                                  | 14    |
| -60.5'           | 60         |             | Bottom of Boring 60.5'                                                                           |                                | 4                              |                                                                                                  | 27    |
|                  |            |             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                |                                |                                                                                                  |       |
|                  |            |             |                                                                                                  |                                |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. spiltspoon w/140 lb. hammer falling 30". |       |

Hole No. **SH-270**

| DRILLING LOG                                                                                                                 |            | DIVISION SOUTH ATLANTIC |                                                                                                               | INSTALLATION SAVANNAH, GA.                                |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| PROJECT SAVANNAH HARBOR DEEPENING                                                                                            |            |                         |                                                                                                               | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 3/4" FISHTAIL |                                |                                                                                                                                                                        |  |
| 1. LOCATION (Coordinates or Station)<br>X=858608 Y=756806 GA. EAST                                                           |            |                         |                                                                                                               | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                         |                                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314    |                                |                                                                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-270                                                            |            |                         |                                                                                                               | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN            |                                | DISTURBED<br>5<br>UNDISTURBED<br>0                                                                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                         |                                                                                                               | 14. TOTAL NUMBER CORE BOXES<br>0                          |                                |                                                                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                         |                                                                                                               | 15. ELEVATION GROUND WATER N/A                            |                                |                                                                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 60.6' (Water 46.6')                                                                               |            |                         |                                                                                                               | 16. DATE HOLE                                             |                                | STARTED<br>18 MAR 92<br>COMPLETED<br>18 MAR 92                                                                                                                         |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                         |                                                                                                               | 17. ELEVATION TOP OF HOLE 0.0'                            |                                |                                                                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE 60.6'                                                                                                 |            |                         |                                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING N/A                    |                                | X                                                                                                                                                                      |  |
|                                                                                                                              |            |                         |                                                                                                               | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                |                                                                                                                                                                        |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>+             | CLASSIFICATION OF MATERIALS<br>(Description)<br>+                                                             | % CORE<br>RECOVER-<br>ERY<br>+                            | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>+                                                                              |  |
|                                                                                                                              |            |                         | Water                                                                                                         |                                                           |                                | Scale change at 45.0'.<br>Set 6" diameter casing by own<br>weight to 48.5'.                                                                                            |  |
|                                                                                                                              |            |                         | Bottom of Harbor 46.6'                                                                                        |                                                           |                                |                                                                                                                                                                        |  |
| -46.6'                                                                                                                       |            |                         | (CH) Dark olive-grey, fat CLAY. Some medium<br>to coarse sand & small shell fragments from<br>46.6' to 48.6'. |                                                           | 1                              | Weight of rods drove splitspoon<br>from 46.6' to 48.6', but had no<br>recovery. Redrove to 48.6', then<br>cont'd. drive to 50.1' for sample<br>#1 from 46.6' to 50.1'. |  |
| -50.1'                                                                                                                       |            |                         | Drove through 1/2" layer of chert at approx.<br>51.3'.                                                        |                                                           |                                |                                                                                                                                                                        |  |
|                                                                                                                              |            |                         | (SC) Dark olive-grey fine clayey SAND.                                                                        |                                                           | 2                              |                                                                                                                                                                        |  |
| -54.6'                                                                                                                       |            |                         | (CH) Dark olive-grey, fat CLAY. Trace of<br>fine sand & coarse chert gravel.                                  |                                                           | 3                              |                                                                                                                                                                        |  |
| -56.1'                                                                                                                       |            |                         | Some fine sand.                                                                                               |                                                           | 4                              |                                                                                                                                                                        |  |
| -57.6'                                                                                                                       |            |                         |                                                                                                               |                                                           | 5                              |                                                                                                                                                                        |  |
| -60.6'                                                                                                                       |            |                         | Bottom of Boring 60.6'                                                                                        |                                                           |                                |                                                                                                                                                                        |  |
|                                                                                                                              |            |                         | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.        |                                                           |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30".                                                                    |  |

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                           |                                | HOLE NO. SH-273<br>SHEET 1<br>OF 1 SHEETS                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" spoilspoon, 5/8" fish tail              |                                |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-869914 Y-755945 GA. EAST                                                           |             |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                       |                                |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                  |                                |                                                                                                     |  |
| 4. HOLE NO. (as shown on drawing title and file number)<br>SH-273                                                            |             |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 6 UNDISTURBED 0 |                                |                                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>N/A                                      |                                |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                                       |                                |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN 60.4' (Water 45.4')                                                                               |             |                            |                                                                                                        | 16. DATE HOLE<br>STARTED 7 JAN 92 COMPLETED 7 JAN 92                    |                                |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                                          |                                |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                                 |             |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                |                                |                                                                                                     |  |
|                                                                                                                              |             |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                        |                                |                                                                                                     |  |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>a                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                      | % CORE<br>RECOVERY                                                      | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |  |
| -45.4'                                                                                                                       | 45          |                            | Bottom of Harbor 45.4'                                                                                 |                                                                         |                                | Scale change at 45.0'. set 6" casing<br>by own weight to 46.9'.                                     |  |
|                                                                                                                              |             |                            | (CL) Dark olive-grey, lean CLAY.                                                                       |                                                                         | 1                              |                                                                                                     |  |
|                                                                                                                              | 50          |                            |                                                                                                        |                                                                         | 2                              |                                                                                                     |  |
|                                                                                                                              | 55          |                            |                                                                                                        |                                                                         | 3                              |                                                                                                     |  |
| -55.9'                                                                                                                       |             |                            | (CH) Dark olive-grey, fat CLAY.                                                                        |                                                                         | 4                              |                                                                                                     |  |
| -57.4'                                                                                                                       |             |                            | (SC) Dark olive-grey, fine clayey SAND.                                                                |                                                                         | 5                              |                                                                                                     |  |
| -58.9'                                                                                                                       |             |                            | (CH) Dark olive-grey, fat CLAY. Some<br>fine sand.                                                     |                                                                         | 6                              |                                                                                                     |  |
| -60.4'                                                                                                                       | 60          |                            | Bottom of Boring 60.4'                                                                                 |                                                                         |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D.<br>spoilspoon w/140 lb. hammer falling 30". |  |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                         |                                |                                                                                                     |  |

[illegible]

FORM 170. SH 279

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC                                                                       |                                              | INSTALLATION<br>SAVANNAH, GA.                                                   |                                                       | SHEET 1<br>OF 1 SHEETS                                                                            |       |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                                                                                                  |                                              | 10. SIZE AND TYPE OF BIT 1 3/8" split spoon, 3 1/2" Fisher                      |                                                       |                                                                                                   |       |
| 2. LOCATION (Coordinates or Station)<br>X=872985 Y=755933 GA. EAST                                                           |       |                                                                                                  |                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                               |                                                       |                                                                                                   |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                                                                                                  |                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                          |                                                       |                                                                                                   |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-279                                                            |       |                                                                                                  |                                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED : UNDISTURBED<br>: 5 : 0 |                                                       |                                                                                                   |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                                                                                                  |                                              | 14. TOTAL NUMBER CORE BOXES 0                                                   |                                                       |                                                                                                   |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                                                                                                  |                                              | 15. ELEVATION GROUND WATER N/A                                                  |                                                       |                                                                                                   |       |
| 7. THICKNESS OF OVERBURDEN 60.7' (Water 44.9')                                                                               |       |                                                                                                  |                                              | 16. DATE HOLE : STARTED : COMPLETED<br>: 24 NOV 91 : 24 NOV 91                  |                                                       |                                                                                                   |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                                                                                                  |                                              | 17. ELEVATION TOP OF HOLE 0.0'                                                  |                                                       |                                                                                                   |       |
| 9. TOTAL DEPTH OF HOLE 60.7'                                                                                                 |       |                                                                                                  |                                              | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                        |                                                       |                                                                                                   |       |
|                                                                                                                              |       |                                                                                                  |                                              | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                |                                                       |                                                                                                   |       |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                                                           | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE RECOVERY                                                                 | BOX OR SAMPLE NO.                                     | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                 | BLOWS |
| 0.0                                                                                                                          | 0     |                                                                                                  |                                              |                                                                                 |                                                       |                                                                                                   |       |
|                                                                                                                              | 40    |                                                                                                  | Water                                        |                                                                                 |                                                       | Scale changed at 40.0'.<br>Set 5" diameter casing by own weight to 47.8'.                         |       |
| -44.9'                                                                                                                       | 45    |                                                                                                  | Bottom of Harbor 44.9'                       |                                                                                 |                                                       |                                                                                                   |       |
| -47.2'                                                                                                                       |       | (SP) Ton, poorly graded coarse SAND.                                                             |                                              | 1                                                                               | Weight of rods drove split spoon from 44.9' to 47.2'. | 0                                                                                                 |       |
| -50.2'                                                                                                                       | 50    | (CL) Olive-grey, silty, lean CLAY.                                                               |                                              | 2                                                                               |                                                       | 38                                                                                                |       |
| -51.7'                                                                                                                       |       | Trace of fine sand.                                                                              |                                              |                                                                                 |                                                       | 22                                                                                                |       |
| -56.2'                                                                                                                       | 55    | (SC) Olive-grey, fine clayey SAND. Trace of silt.                                                |                                              | 3                                                                               |                                                       | 48                                                                                                |       |
| -57.7'                                                                                                                       |       | (CH) Olive-grey & grey, fat CLAY. Trace of silt & fine sand.                                     |                                              | 4                                                                               |                                                       | 42                                                                                                |       |
| -59.2'                                                                                                                       | 60    | Olive-grey, some silt & fine sand.                                                               |                                              |                                                                                 |                                                       | 19                                                                                                |       |
| -60.7'                                                                                                                       |       | (CL) Olive-grey, silty lean CLAY. Trace of fine sand.                                            |                                              | 5                                                                               |                                                       | 20                                                                                                |       |
|                                                                                                                              |       | Bottom of Boring 60.7'                                                                           |                                              |                                                                                 |                                                       | 22                                                                                                |       |
|                                                                                                                              |       | Continued on sheet #2                                                                            |                                              |                                                                                 |                                                       | 27                                                                                                |       |
|                                                                                                                              |       | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                              |                                                                                 |                                                       | 23                                                                                                |       |
|                                                                                                                              |       |                                                                                                  |                                              |                                                                                 |                                                       | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. split spoon w/140 lb. hammer falling 30". |       |

HOLE NO. SH-280

| DRILLING LOG                                                                                                              |               | DIRECTION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                  |                              | SHEET 1 OF 1 SHEETS                                                                                                    |  |
|---------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |               |                          |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5 1/2" FISHTAIL |                              |                                                                                                                        |  |
| 2. LOCATION (Coordinates or Station) X-873207 Y-755300 GA. EAST                                                           |               |                          |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW              |                              |                                                                                                                        |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |               |                          |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314         |                              |                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-280                                                            |               |                          |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 9                |                              | DISTURBED 9 UNDISTURBED 0                                                                                              |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |               |                          |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                               |                              |                                                                                                                        |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                          |                                                                                                  | 15. ELEVATION GROUND WATER N/A                              |                              |                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 59.8' (Water 40.3')                                                                            |               |                          |                                                                                                  | 16. DATE HOLE STARTED 10 MAR 92 COMPLETED 10 MAR 92         |                              |                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |               |                          |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                              |                              |                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE 59.8'                                                                                              |               |                          |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                      |                              |                                                                                                                        |  |
|                                                                                                                           |               |                          |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.               |                              |                                                                                                                        |  |
| ELEVATION<br>0.0'                                                                                                         | DEPTH<br>0.0' | LEGEND<br>a              | CLASSIFICATION OF MATERIALS<br>(Description)<br>b                                                | % CORE<br>RECOVERY<br>c                                     | BOX OR<br>SAMPLE<br>NO.<br>d | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e                              |  |
|                                                                                                                           |               |                          | Water                                                                                            |                                                             |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 48.3'.                                                  |  |
| -40.3'                                                                                                                    | 40            |                          | Bottom of Harbor 40.3'                                                                           |                                                             |                              |                                                                                                                        |  |
|                                                                                                                           |               |                          | (SP) Gray, medium, poorly graded SAND. Trace of silt & small shell fragments.                    |                                                             | 1                            | Weight of rods drove splitspoon from 40.3' to 42.6'. Cont'd. drive to 43.3'. For sample 1 from 40.3' to 43.3'. 0       |  |
| -44.8'                                                                                                                    | 45            |                          | (SC) Very dark grey to black, medium to coarse clayey SAND. Trace of small shell fragments.      |                                                             | 2                            | Weight of rods drove splitspoon from 46.3' to 47.8'. For sample 5 from change of material at approx. 48.8' to 49.3'. 5 |  |
| -46.3'                                                                                                                    |               |                          | (CH) Very dark grey to black, fat CLAY. Some fine sand.                                          |                                                             | 3                            | 1                                                                                                                      |  |
| -47.8'                                                                                                                    |               |                          | (SC) Very dark grey to black, fine clayey SAND. Some fine gravel.                                |                                                             | 4                            | 0                                                                                                                      |  |
| -48.8'                                                                                                                    |               |                          | (CH) Olive-grey, fat CLAY. Trace of fine sand.                                                   |                                                             | 5                            | 10                                                                                                                     |  |
|                                                                                                                           | 50            |                          |                                                                                                  |                                                             | 6                            | 10                                                                                                                     |  |
| -52.3'                                                                                                                    |               |                          | (SC) Olive-grey, fine clayey SAND.                                                               |                                                             | 7                            | 13                                                                                                                     |  |
|                                                                                                                           | 55            |                          |                                                                                                  |                                                             |                              | 18                                                                                                                     |  |
| -56.8'                                                                                                                    |               |                          | (CH) Olive-grey, fat CLAY. Some fine sand & light grey streaks.                                  |                                                             | 8                            | 13                                                                                                                     |  |
|                                                                                                                           |               |                          |                                                                                                  |                                                             | 9                            | 10                                                                                                                     |  |
| -59.8'                                                                                                                    | 60            |                          | Bottom of Boring 59.8'                                                                           |                                                             |                              | 22                                                                                                                     |  |
|                                                                                                                           |               |                          | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                             |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".                       |  |



hole NO. 37-282

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 3/8" split spoon, 5 1/2" fishtail |                              |                                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>X=874328 Y=755643 GA. EAST                                                           |            |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                       |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314       |                              |                                                                                                       |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-282                                                            |            |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                              | 13. DISTURBED : 6<br>UNDISTURBED : 0                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES 0                                |                              |                                                                                                       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                        | 15. ELEVATION GROUND WATER N/A                               |                              |                                                                                                       |  |
| 7. THICKNESS OF OVERBURDEN 60.3' (WATER 43.4')                                                                               |            |                            |                                                                                                        | 16. DATE HOLE                                                |                              | 16. STARTED : 24 NOV 91<br>COMPLETED : 24 NOV 91                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                               |                              |                                                                                                       |  |
| 9. TOTAL DEPTH OF HOLE 60.3'                                                                                                 |            |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A Z                     |                              |                                                                                                       |  |
|                                                                                                                              |            |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                                       |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>•                | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                      | % CORE<br>RECOVER-<br>ERY<br>JAR                             | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g              |  |
|                                                                                                                              |            |                            | Water                                                                                                  |                                                              |                              | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 45.9'.                           |  |
| -43.4'                                                                                                                       |            |                            | Bottom of Harbor 43.4'                                                                                 |                                                              |                              |                                                                                                       |  |
| -45.0'                                                                                                                       |            | •••••                      | (SP) Grayish-tan, poorly graded coarse SAND.<br>Trace of fine gravel & silt.                           |                                                              | 1                            | 0                                                                                                     |  |
| -46.8'                                                                                                                       |            | •••••                      | Gray.                                                                                                  |                                                              |                              | Weight of rods drove split spoon<br>from 43.4' to 45.3'.                                              |  |
| -48.3'                                                                                                                       |            | •••••                      | Light gray.                                                                                            |                                                              | 2                            | 23<br>Began using Florigal drilling<br>mud at 49.8'.                                                  |  |
| -50.0'                                                                                                                       |            | •••••                      |                                                                                                        |                                                              |                              | 24<br>39                                                                                              |  |
| -51.3'                                                                                                                       |            | •••••                      |                                                                                                        |                                                              |                              | 26                                                                                                    |  |
| -52.8'                                                                                                                       |            | •••••                      | (CL) Dark olive-grey, silty lean CLAY.<br>Trace of fine sand.                                          |                                                              | 3                            | 40                                                                                                    |  |
| -54.3'                                                                                                                       |            | •••••                      | Some fine sand.                                                                                        |                                                              |                              | 18                                                                                                    |  |
| -55.8'                                                                                                                       |            | •••••                      | (SC) Dark olive-grey, clayey fine SAND.<br>Some silt.                                                  |                                                              | 4                            | 20                                                                                                    |  |
| -57.3'                                                                                                                       |            | •••••                      | (CH) Light & dark olive-grey, fat CLAY.<br>Trace of silt.                                              |                                                              | 5                            | 23                                                                                                    |  |
| -58.8'                                                                                                                       |            | •••••                      | Some silt & fine sand.                                                                                 |                                                              |                              | 29                                                                                                    |  |
| -60.3'                                                                                                                       |            | •••••                      | (SC) Dark olive-grey, fine clayey SAND.<br>Some silt.                                                  |                                                              | 6                            | 29                                                                                                    |  |
|                                                                                                                              |            |                            | Bottom of Boring 60.3'                                                                                 |                                                              |                              | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D.<br>split spoon w/ 140 lb. hammer falling 30". |  |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                              |                              |                                                                                                       |  |

Hole No. **SH-283**

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                   |                              | SHEET 1<br>OF 1 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 3/4" split spoon, 5 1/2" fishtail |                              |                                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>X-874081 Y-754828 GA. EAST                                                           |            |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW               |                              |                                                                                                       |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314          |                              |                                                                                                       |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-283                                                            |            |                            |                                                                                                        | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN                  |                              | 13. DISTURBED<br>5<br>13. UNDISTURBED<br>0                                                            |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                                |                              |                                                                                                       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                        | 15. ELEVATION GROUND WATER<br>N/A                               |                              |                                                                                                       |  |
| 7. THICKNESS OF OVERBURDEN<br>60.8' (WATER 39.4')                                                                            |            |                            |                                                                                                        | 16. DATE HOLE<br>STARTED 25 NOV 91                              |                              | 16. COMPLETED<br>25 NOV 91                                                                            |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE<br>0.0'                               |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                             |  |
| 9. TOTAL DEPTH OF HOLE<br>60.8'                                                                                              |            |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                |                              |                                                                                                       |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                      | % CORE<br>RECOV-<br>ERY<br>JAR                                  | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>j             |  |
|                                                                                                                              |            |                            | Water                                                                                                  |                                                                 |                              | Scale change at 35.0'.<br>Set 6" diameter casing by own<br>weight to 46.0'.                           |  |
|                                                                                                                              | 35         |                            | Bottom of Harbor 39.4'                                                                                 |                                                                 |                              |                                                                                                       |  |
|                                                                                                                              | 40         |                            | (MH) Dark gray to black, clayey SILT.<br>Very soft & wet.                                              |                                                                 | 1                            | Weight of rods drove split spoon<br>from 39.4' to 45.8'.<br>0                                         |  |
|                                                                                                                              | 45         |                            | (CH) Dark olive-grey, fat CLAY.<br>Trace of silt & fine sand.                                          |                                                                 | 2                            | 28                                                                                                    |  |
|                                                                                                                              | 48.8'      |                            | Some fine sand.                                                                                        |                                                                 |                              | 22                                                                                                    |  |
|                                                                                                                              | 50         |                            | (SC) Dark olive-grey, fine clayey SAND.<br>Trace of silt.                                              |                                                                 | 3                            | 31                                                                                                    |  |
|                                                                                                                              | 54.8'      |                            | Several grey fat clay layers up to<br>0.1" thick.                                                      |                                                                 | 4                            | 29                                                                                                    |  |
|                                                                                                                              | 57.8'      |                            | No grey fat clay layers.                                                                               |                                                                 |                              | 23                                                                                                    |  |
|                                                                                                                              | 60         |                            | Bottom of Boring 60.8'                                                                                 |                                                                 | 5                            | 16                                                                                                    |  |
|                                                                                                                              | 60.8'      |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                 |                              | 24                                                                                                    |  |
|                                                                                                                              |            |                            |                                                                                                        |                                                                 |                              | 18                                                                                                    |  |
|                                                                                                                              |            |                            |                                                                                                        |                                                                 |                              | 20                                                                                                    |  |
|                                                                                                                              |            |                            |                                                                                                        |                                                                 |                              | 21                                                                                                    |  |
|                                                                                                                              |            |                            |                                                                                                        |                                                                 |                              | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D.<br>split spoon w/ 140 lb. hammer falling 30". |  |

Hole No. **SH 286**

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                                                                                  | INSTALLATION<br>ANNAAH, GA.                                                                      |                                | SHEET 1<br>OF 1 SHEETS                                                                    |    |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|----|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                                     |                                |                                                                                           |    |
| 2. LOCATION (Coordinates or Station)<br>X-875276 Y-754990 GA. EAST                                                           |             |                            |                                                                                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                                |                                                                                           |    |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Folling 314                                           |                                |                                                                                           |    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-286                                                            |             |                            |                                                                                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 4 UNDISTURBED: 0                        |                                |                                                                                           |    |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                                |                                                                                           |    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                                                                |                                |                                                                                           |    |
| 7. THICKNESS OF OVERBURDEN<br>59.9' (Water 44.9')                                                                            |             |                            |                                                                                                                                                                  | 16. DATE HOLE<br>STARTED: 18 MAR 92 COMPLETED: 18 MAR 92                                         |                                |                                                                                           |    |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                                |                                                                                           |    |
| 9. TOTAL DEPTH OF HOLE<br>59.9'                                                                                              |             |                            |                                                                                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                                |                                                                                           |    |
|                                                                                                                              |             |                            |                                                                                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                                |                                                                                           |    |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0+ | LEGEND<br>+                | CLASSIFICATION OF MATERIALS<br>(Description)<br>+                                                                                                                | Z. CORE<br>RECOVERY<br>+                                                                         | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>+ |    |
|                                                                                                                              |             |                            | Water                                                                                                                                                            |                                                                                                  |                                | Scale change at 40.0'. Set 8" diameter casing by own weight to 45.5'.                     |    |
| -44.9'                                                                                                                       | 45          |                            | (CH) Olive-gray, fat CLAY. Thin layer about 0.2' thick of very dark gray, fine to medium silty sand with some small shell fragments from 44.9' to approx. 45.1'. |                                                                                                  | 1                              | 11                                                                                        |    |
|                                                                                                                              |             |                            |                                                                                                                                                                  |                                                                                                  |                                |                                                                                           | 23 |
| -50.9'                                                                                                                       | 50          |                            | Trace of fine sand in thin streaks & lenses.                                                                                                                     |                                                                                                  | 2                              | 33                                                                                        |    |
| -52.4'                                                                                                                       |             |                            |                                                                                                                                                                  |                                                                                                  |                                |                                                                                           | 29 |
|                                                                                                                              |             |                            | (SC) Olive-gray, fine clayey SAND.                                                                                                                               |                                                                                                  | 3                              | 32                                                                                        |    |
| -56.9'                                                                                                                       | 55          |                            |                                                                                                                                                                  |                                                                                                  |                                |                                                                                           | 28 |
|                                                                                                                              |             |                            |                                                                                                                                                                  |                                                                                                  |                                |                                                                                           | 23 |
|                                                                                                                              |             |                            |                                                                                                                                                                  |                                                                                                  |                                |                                                                                           | 21 |
| -59.9'                                                                                                                       | 60          |                            | Several streaks approx. 0.1' thick of light gray fat clay from 56.9' to 58.4'.                                                                                   |                                                                                                  | 4                              | 15                                                                                        |    |
|                                                                                                                              |             |                            | Bottom of Boring 59.9'                                                                                                                                           |                                                                                                  |                                | 23                                                                                        |    |
|                                                                                                                              |             |                            |                                                                                                                                                                  | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                |                                                                                           |    |
|                                                                                                                              |             |                            |                                                                                                                                                                  | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |                                |                                                                                           |    |

# SAVANNAH HARBOR BORING LOGS

From Station 0+000

To

Station 24+000

| DIVISION                                                                                                                     |             | INSTALLATION                                      |                                                                                                                                                             | Hole No. SH-60                                                                               |                              |                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------|
| DRILLING LOG                                                                                                                 |             | Savannah River, GA                                |                                                                                                                                                             | SHEET 1 OF 2 SHEETS                                                                          |                              |                                                                                        |
| 1. PROJECT<br>Savannah Harbor                                                                                                |             | 10. SIZE AND TYPE OF BIT 1 3/8" ID SPLITSPHOON    |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 2. LOCATION (Coordinates or Stationing)<br>See Plan Sta 11+800E. R= "7"                                                      |             | 11. DAYTON FOR ELEVATION SHOWN (FEET OR METERS)   |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 3. DRILLING AREA<br>Savannah District                                                                                        |             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CMW 75 |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-60                                                             |             | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN         |                                                                                                                                                             | DISTURBED UNDISTURBED<br>5 0                                                                 |                              |                                                                                        |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |             | 14. TOTAL NUMBER CORE BOXES                       |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             | 15. ELEVATION GROUND WATER                        |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 7. THICKNESS OF OVERBURDEN<br>55.5'                                                                                          |             | 16. DATE HOLE                                     |                                                                                                                                                             | STARTED COMPLETED<br>7 Feb 78 7 Feb 78                                                       |                              |                                                                                        |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             | 17. ELEVATION TOP OF HOLE<br>0.0 MLW              |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 9. TOTAL DEPTH OF HOLE<br>55.5' MLW                                                                                          |             | 18. TOTAL CORE RECOVERY FOR BORING                |                                                                                                                                                             | 1                                                                                            |                              |                                                                                        |
|                                                                                                                              |             | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN  |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| ELEVATION<br>0.0 MLW                                                                                                         | DEPTH<br>0' | LEGEND<br>c                                       | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                           | % CORE<br>RECOVER-<br>Y<br>e                                                                 | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |
|                                                                                                                              | 5'          |                                                   | Water                                                                                                                                                       |                                                                                              |                              |                                                                                        |
|                                                                                                                              | 10'         |                                                   |                                                                                                                                                             |                                                                                              |                              |                                                                                        |
| 15'                                                                                                                          | 15'         |                                                   | Bottom of river -15.0' MLW                                                                                                                                  |                                                                                              | JAR                          | Blows                                                                                  |
|                                                                                                                              |             |                                                   | Probable soft silt to 18.0'                                                                                                                                 |                                                                                              |                              |                                                                                        |
|                                                                                                                              | 20'         |                                                   | SM - Greenish gray silty fine sand, soft, with pockets of silt and fine shell fragments. Weight of hammer pushed rods with splitspoon from -15.0' to -22.5' |                                                                                              | 1                            |                                                                                        |
|                                                                                                                              | 25'         |                                                   |                                                                                                                                                             |                                                                                              | 2                            |                                                                                        |
| -30'                                                                                                                         | 30'         |                                                   | Continued on sheet 2                                                                                                                                        |                                                                                              |                              |                                                                                        |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                                      |             |                                                   |                                                                                                                                                             | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon 4/140 lb hammer falling 30' |                              |                                                                                        |

| DRILLING LOG (Cont Sheet)       |            | FROM TOP OF HOLE |                                                                  | Hole No. SH-60               |                                     |                                                                                           |
|---------------------------------|------------|------------------|------------------------------------------------------------------|------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT Savannah Harbor         |            | 0 0 MLW          |                                                                  | SHEET 2 OF 2 SHEETS          |                                     |                                                                                           |
| INSTALLATION Savannah River, GA |            |                  |                                                                  |                              |                                     |                                                                                           |
| ELEVATION<br>a                  | DEPTH<br>b | LEGEND<br>c      | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>JAN<br>f | REMARKS<br>(Drilling note, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                 | 30'        |                  | SM - Greenish gray silty<br>fine sand with shell fragments       |                              |                                     | 5                                                                                         |
|                                 |            |                  | Fine to medium sand                                              |                              |                                     | 8                                                                                         |
|                                 | 35'        |                  |                                                                  |                              |                                     | 35                                                                                        |
|                                 |            |                  |                                                                  |                              |                                     | 44                                                                                        |
| -37.5                           |            |                  | SP - Light gray poorly graded<br>sand and pea size gravel        |                              |                                     | 50                                                                                        |
|                                 | 40'        |                  |                                                                  |                              | 3                                   | 61                                                                                        |
|                                 |            |                  |                                                                  |                              |                                     | 72                                                                                        |
|                                 |            |                  |                                                                  |                              | 4                                   | 69                                                                                        |
|                                 | 45'        |                  |                                                                  |                              |                                     | 87                                                                                        |
|                                 |            |                  |                                                                  |                              |                                     | 58                                                                                        |
|                                 |            |                  |                                                                  |                              |                                     | 58                                                                                        |
| -49.5                           |            |                  | SM - Gray silty fine and<br>medium sand with shell<br>fragments. |                              |                                     | 55                                                                                        |
|                                 | 50'        |                  |                                                                  |                              | 5                                   | 38                                                                                        |
|                                 |            |                  |                                                                  |                              |                                     | 44                                                                                        |
|                                 |            |                  |                                                                  |                              |                                     | 49                                                                                        |
| -55.5                           | 55'        |                  |                                                                  |                              |                                     | 47                                                                                        |
|                                 |            |                  | Bottom of hole -55.5' MLW                                        |                              |                                     |                                                                                           |

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                               | INSTALLATION<br>Savannah River, GA                                      |                              | Hole No. SH-61<br>SHEET 1<br>OF 2 SHEETS                                                    |       |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>Savannah Harbor<br>LOCATION (Coordinates or Address)<br>Sta 11+800E, R= 77"                                    |            |                            |                                                                               | 10. SIZE AND TYPE OF BIT: 3/8" ID SPLIT SPOON                           |                              |                                                                                             |       |
| 2. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                               | 11. DATUM FOR ELEVATION SHOWN (FEET or M)<br>MLW                        |                              |                                                                                             |       |
| 3. HOLE NO. (As shown on drawing title and this number)<br>SH-61                                                             |            |                            |                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                       |                              |                                                                                             |       |
| 4. NAME OF DRILLER<br>T. W. Scott                                                                                            |            |                            |                                                                               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 3 UNDISTURBED 0 |                              |                                                                                             |       |
| 5. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                               | 14. TOTAL NUMBER CORE BOXES                                             |                              |                                                                                             |       |
| 6. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |            |                            |                                                                               | 15. ELEVATION GROUND WATER                                              |                              |                                                                                             |       |
| 7. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                            |                                                                               | 16. DATE HOLE<br>STARTED 1 Feb 78 COMPLETED 1 Feb 78                    |                              |                                                                                             |       |
| 8. TOTAL DEPTH OF HOLE<br>-55.0' MLW                                                                                         |            |                            |                                                                               | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                    |                              |                                                                                             |       |
| 9. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                                                                              |            |                            |                                                                               | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                 |                              |                                                                                             |       |
| ELEVATION<br>e                                                                                                               | DEPTH<br>d | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                             | 2 CORE<br>RECOV-<br>ERY<br>e                                            | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water level, depth of<br>penetration, etc., if significant)<br>g |       |
| 0'                                                                                                                           |            |                            |                                                                               |                                                                         |                              |                                                                                             |       |
| 5'                                                                                                                           |            |                            | Water                                                                         |                                                                         |                              |                                                                                             |       |
| 10'                                                                                                                          |            |                            |                                                                               |                                                                         |                              |                                                                                             |       |
| 15'                                                                                                                          |            |                            |                                                                               |                                                                         |                              |                                                                                             |       |
|                                                                                                                              |            |                            | Bottom of river -17.5' MLW                                                    |                                                                         | JAR                          |                                                                                             | BLOWS |
| 20'                                                                                                                          |            |                            | OL - Black silt, very soft                                                    |                                                                         |                              |                                                                                             | 0     |
|                                                                                                                              |            |                            | NOTE: Weight of hammer<br>pushed rods with splitspoon<br>from -17.5' to 32.5' |                                                                         | 1                            |                                                                                             | 0     |
| 25'                                                                                                                          |            |                            |                                                                               |                                                                         |                              |                                                                                             | 0     |
|                                                                                                                              |            |                            |                                                                               |                                                                         |                              |                                                                                             | 0     |
| 30'                                                                                                                          |            |                            |                                                                               |                                                                         |                              |                                                                                             | 0     |
|                                                                                                                              |            |                            | Continued on sheet 2                                                          |                                                                         |                              |                                                                                             | 0     |
|                                                                                                                              |            |                            | NOTE: Soils field classified<br>in accordance with the Unified                |                                                                         |                              |                                                                                             |       |
|                                                                                                                              |            |                            |                                                                               |                                                                         |                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/                      |       |

| DRILLING LOG (Cont Sheet) |       | FROM TOP OF HOLE   |                                                                      | 0.0 MLW                 |                                | Hole No. SH-61                                                                         |       |
|---------------------------|-------|--------------------|----------------------------------------------------------------------|-------------------------|--------------------------------|----------------------------------------------------------------------------------------|-------|
| PROJECT                   |       | INSTALLATION       |                                                                      | SHEET 2                 |                                | OF 2 SHEETS                                                                            |       |
| Savannah Harbor           |       | Savannah River, GA |                                                                      |                         |                                |                                                                                        |       |
| ELEVATION                 | DEPTH | LEGEND             | CLASSIFICATION OF MATERIALS<br>(Description)                         | % CORE<br>RECOV.<br>SET | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water level, depth of<br>penetration, etc., if significant) | BLOWS |
| a                         | b     | c                  | d                                                                    | e                       | f                              | g                                                                                      | h     |
|                           |       |                    | OL - Black soft silt                                                 |                         |                                |                                                                                        | 0     |
|                           |       |                    |                                                                      |                         | 2                              |                                                                                        | 0     |
|                           | 35'   |                    | SM - Gray silty fine sand<br>with soft silt lenses                   |                         |                                |                                                                                        | 4     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 4     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 1     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 1     |
|                           | 40'   |                    |                                                                      |                         |                                |                                                                                        | 1     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 7     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 5     |
|                           | 45'   |                    |                                                                      |                         |                                |                                                                                        | 9     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 8     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 6     |
|                           |       |                    |                                                                      |                         |                                |                                                                                        |       |
|                           | 50'   |                    |                                                                      |                         |                                |                                                                                        | 11    |
|                           |       |                    |                                                                      |                         |                                |                                                                                        |       |
|                           |       |                    | Gray slightly clayey silty<br>sand with some fine shell<br>fragments |                         | 3                              |                                                                                        | 14    |
|                           |       |                    |                                                                      |                         |                                |                                                                                        | 40    |
|                           | 55'   |                    |                                                                      |                         |                                |                                                                                        | 48    |
|                           |       |                    | Bottom of hole -55.0' MLW                                            |                         |                                |                                                                                        |       |



| DRILLING LOG                                                                                                                |       | DIVISION<br>South Atlantic |                                              | INSTALLATION<br>Savannah River, GA                                   |                         | SHEET<br>1<br>OF 2 SHEETS                                                           |  |
|-----------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|----------------------------------------------|----------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                               |       |                            |                                              | 10. SIZE AND TYPE OF BIT 1 3/8" FN split spoon                       |                         |                                                                                     |  |
| LOCATION (Continuation of Sheet)<br>Sta 1+500 N, R=15"                                                                      |       |                            |                                              | 11. DATUM FOR ELEVATION MEASUREMENT<br>MLW                           |                         |                                                                                     |  |
| DRILLING AGENCY<br>Savannah District                                                                                        |       |                            |                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75                    |                         |                                                                                     |  |
| A. HOLE NO. (As shown on drawing sheet and the number)<br>SB-62                                                             |       |                            |                                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN: 4      UNDISTURBED 0 |                         |                                                                                     |  |
| B. NAME OF DRILLER<br>T. W. Scott                                                                                           |       |                            |                                              | 14. TOTAL NUMBER CORE BOXES                                          |                         |                                                                                     |  |
| C. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED      DEG. FROM VERT. |       |                            |                                              | 15. ELEVATION GROUND WATER                                           |                         |                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>56.0'                                                                                         |       |                            |                                              | 16. DATE HOLE<br>13 Feb 78      13 Feb 78                            |                         |                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                          |       |                            |                                              | 17. ELEVATION TOP OF HOLE<br>0.0 MLW                                 |                         |                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br>-56.0' MLW                                                                                        |       |                            |                                              | 18. TOTAL CORE RECOVERY FOR BORING                                   |                         |                                                                                     |  |
|                                                                                                                             |       |                            |                                              | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN                     |                         |                                                                                     |  |
| ELEVATION                                                                                                                   | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOVER-<br>Y                                              | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Dyeing class, water loss, depth of<br>weathering, etc., if significant) |  |
| 0.0 MLW                                                                                                                     | 0'    | c                          |                                              |                                                                      |                         |                                                                                     |  |
|                                                                                                                             | 5'    |                            | Water                                        |                                                                      |                         |                                                                                     |  |
|                                                                                                                             | 10'   |                            |                                              |                                                                      |                         |                                                                                     |  |
|                                                                                                                             | 15'   |                            |                                              |                                                                      |                         |                                                                                     |  |
|                                                                                                                             | 20'   |                            |                                              |                                                                      |                         |                                                                                     |  |
|                                                                                                                             | 25'   |                            |                                              |                                                                      |                         |                                                                                     |  |
|                                                                                                                             | 30'   |                            |                                              |                                                                      |                         |                                                                                     |  |
| 0.0                                                                                                                         | 30'   |                            | Continued on sheet 2                         |                                                                      |                         |                                                                                     |  |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System.                               |       |                            |                                              | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" FN split spoon |                         |                                                                                     |  |

| DRILLING LOG (Cont Sheet) |       | ELEVATION TOP OF HOLE |                                                    | Hole No.                |                         |                                                                                        |
|---------------------------|-------|-----------------------|----------------------------------------------------|-------------------------|-------------------------|----------------------------------------------------------------------------------------|
| PROJECT                   |       | INVESTIGATION         |                                                    | SHEET 2                 |                         |                                                                                        |
| Savannah Harbor           |       | Savannah River, GA    |                                                    | OF 2 SHEETS             |                         |                                                                                        |
| ELEVATION                 | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)       | % CORE<br>RECOV.<br>KEY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water level, depth of<br>penetration, etc., if significant) |
| a                         | b     | c                     | d                                                  | e                       | f                       | g                                                                                      |
| -32.0                     | 30'   |                       | Water<br>Bottom of river -32.0' MLW                |                         | JAR                     | Flow                                                                                   |
|                           |       |                       | SM - Gray silty fine sand<br>and soft silt mixture |                         | 1                       | 9                                                                                      |
|                           | 35'   |                       |                                                    |                         |                         | 3                                                                                      |
|                           |       |                       | Fine to medium sand with<br>shell fragments        |                         | 2                       | 9                                                                                      |
|                           |       |                       |                                                    |                         |                         | 10                                                                                     |
|                           | 40'   |                       |                                                    |                         |                         | 10                                                                                     |
|                           |       |                       |                                                    |                         |                         | 14                                                                                     |
| -42.0                     |       |                       |                                                    |                         |                         | 24                                                                                     |
|                           |       |                       | SP - Gray poorly graded sand                       |                         |                         | 44                                                                                     |
|                           | 45'   |                       |                                                    |                         | 3                       | 49                                                                                     |
|                           |       |                       |                                                    |                         |                         | 50                                                                                     |
| -49.0                     |       |                       |                                                    |                         |                         | 49                                                                                     |
|                           | 50'   |                       | SM - Green fine silty sand                         |                         | 4                       | 54                                                                                     |
|                           |       |                       |                                                    |                         |                         | 40                                                                                     |
|                           |       |                       |                                                    |                         |                         | 28                                                                                     |
|                           | 55'   |                       |                                                    |                         |                         | 39                                                                                     |
| -56.0                     |       |                       | Bottom of hole -56.0' MLW                          |                         |                         | 41                                                                                     |

| DRILLING LOG                                                                                                                 |            | DIVISION       |                                                                                                                                                     | INSTALLATION                                      |                              | Hole No. SH-63                                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Savannah Harbor                                                                                                |            | South Atlantic |                                                                                                                                                     | Savannah River, GA                                |                              | SHEET 1<br>OF 2 SHEETS                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>Sta 0+500N, R= "4"                                                                   |            |                |                                                                                                                                                     | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon     |                              |                                                                                                     |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                |                                                                                                                                                     | 11. DAYUM FOR ELEVATION SHOWN (TBM or BM)<br>MTW  |                              |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-63                                                             |            |                |                                                                                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CNR 75 |                              |                                                                                                     |  |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |            |                |                                                                                                                                                     | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN    |                              | DISTURBED 4<br>UNDISTURBED 0                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                |                                                                                                                                                     | 14. TOTAL NUMBER CORE BOXES                       |                              |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>55.5'                                                                                          |            |                |                                                                                                                                                     | 15. ELEVATION GROUND WATER                        |                              |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                |                                                                                                                                                     | 16. DATE HOLE                                     |                              | STARTED 12 Feb 78<br>COMPLETED 12 Feb 78                                                            |  |
| 9. TOTAL DEPTH OF HOLE<br>-55.5' MLW                                                                                         |            |                |                                                                                                                                                     | 17. ELEVATION TOP OF HOLE                         |                              | 0.0 MLW                                                                                             |  |
|                                                                                                                              |            |                |                                                                                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING                |                              | 1                                                                                                   |  |
|                                                                                                                              |            |                |                                                                                                                                                     | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. CRYEEN   |                              |                                                                                                     |  |
| ELEVATION<br>e                                                                                                               | DEPTH<br>f | LEGEND<br>g    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                   | % CORE<br>RECOVERY<br>h                           | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>j           |  |
| -30.0                                                                                                                        | 30         |                | Water                                                                                                                                               |                                                   |                              |                                                                                                     |  |
|                                                                                                                              |            |                | Bottom of river -30.0' MLW<br>Continued on sheet 2<br>NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System. | 8                                                 | 137                          | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/<br>140 lb hammer falling 30' |  |

| DRILLING LOG (Cont Sheet) |       | TON TOP OF HOLE    |                                              | Hole No. SH-63          |                         |                                                                                     |
|---------------------------|-------|--------------------|----------------------------------------------|-------------------------|-------------------------|-------------------------------------------------------------------------------------|
| PROJECT                   |       | INSTALLATION       |                                              | SHEET 2                 |                         |                                                                                     |
| Savannah Harbor           |       | Savannah River, GA |                                              | OF 2 SHEETS             |                         |                                                                                     |
| ELEVATION                 | DEPTH | LEGEND             | CLASSIFICATION OF MATERIALS<br>(Description) | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>washberry, etc., if significant) |
| a                         | 30'   | c                  | Bottom of River -30.0' MLW                   | e                       | JAR                     | f Blows                                                                             |
|                           |       |                    | SM - Gray silty fine sand                    |                         | 1                       | 9                                                                                   |
|                           |       |                    |                                              |                         |                         | 2                                                                                   |
|                           | 35'   |                    | Fine to medium sand with<br>shell fragments  |                         | 2                       | 10                                                                                  |
|                           |       |                    |                                              |                         |                         | 10                                                                                  |
|                           |       |                    |                                              |                         |                         | 10                                                                                  |
|                           |       |                    |                                              |                         |                         | 12                                                                                  |
| -40.5                     | 40'   |                    | SP - Gray poorly graded sand                 |                         | 3                       | 19                                                                                  |
|                           |       |                    |                                              |                         |                         | 39                                                                                  |
|                           | 45'   |                    |                                              |                         |                         | 47                                                                                  |
|                           |       |                    |                                              |                         |                         | 51                                                                                  |
|                           |       |                    |                                              |                         |                         | 49                                                                                  |
| -49.5                     | 50'   |                    | SM - Green fine silty sand                   |                         | 4                       | 5                                                                                   |
|                           |       |                    |                                              |                         |                         | 40                                                                                  |
|                           |       |                    |                                              |                         |                         | 29                                                                                  |
|                           |       |                    |                                              |                         |                         | 37                                                                                  |
| -55.5                     | 55'   |                    | Bottom of hole -55.5' MLW                    |                         |                         | 39                                                                                  |
|                           |       |                    |                                              |                         |                         | 44                                                                                  |

Hole No. SH-81

| DRILLING LOG                                                                                                                 |            | DIVISION           |                                                                                                  | INSTALLATION                                                 |                              | SHEET 1<br>OF 1 SHEETS                                                                               |             |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------|-------------|
| 1. PROJECT<br>Savannah Harbor Comprehensive Study                                                                            |            | Southeast Atlantic |                                                                                                  | Savannah, GA                                                 |                              |                                                                                                      |             |
| 2. LOCATION (Coordinates or Station)<br>891,803X, 742,334Y                                                                   |            |                    |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon                |                              |                                                                                                      |             |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                    |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                      |             |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-81                                                             |            |                    |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Sprague & Henwood |                              |                                                                                                      |             |
| 5. NAME OF DRILLER<br>T.W. Scott                                                                                             |            |                    |                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN               |                              | DISTURBED<br>3                                                                                       | UNDISTURBED |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                    |                                                                                                  | 14. TOTAL NUMBER CORE BOXES                                  |                              |                                                                                                      |             |
| 7. THICKNESS OF OVERBURDEN<br>45.5' +                                                                                        |            |                    |                                                                                                  | 15. ELEVATION GROUND WATER                                   |                              |                                                                                                      |             |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                    |                                                                                                  | 16. DATE HOLE<br>STARTED 23 Nov 82 COMPLETED 23 Nov 82       |                              |                                                                                                      |             |
| 9. TOTAL DEPTH OF HOLE<br>45.5'                                                                                              |            |                    |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                        |                              |                                                                                                      |             |
|                                                                                                                              |            |                    |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>%                      |                              |                                                                                                      |             |
|                                                                                                                              |            |                    |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>James Arthur, Geologist        |                              |                                                                                                      |             |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c        | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                                 | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g            |             |
| 0.0' MLW                                                                                                                     |            |                    | Water                                                                                            |                                                              | 1A                           |                                                                                                      |             |
|                                                                                                                              |            |                    | Bottom of Harbor 36.0'                                                                           |                                                              |                              | Blows                                                                                                |             |
| -36.0                                                                                                                        |            |                    | MH-Dark greenish gray plas-<br>tic silt with some fine to<br>medium sand.                        |                                                              | 1                            | Note: Weight of drill<br>rods drove splitspoon<br>from 36.0' to 39.5'.                               |             |
| -38.5                                                                                                                        |            |                    | SM-Dark greenish gray fine<br>to medium silty sand                                               |                                                              | 2                            | 18                                                                                                   |             |
|                                                                                                                              |            |                    | Medium to coarse grained<br>with some shell fragments                                            |                                                              |                              | 15                                                                                                   |             |
|                                                                                                                              |            |                    | Green fine to medium grain                                                                       |                                                              | 3                            | Note: Hole terminated<br>due to inoperative<br>hoisting cable.                                       |             |
| -45.5                                                                                                                        |            |                    | Bottom of Hole 45.5'                                                                             |                                                              |                              | 19                                                                                                   |             |
|                                                                                                                              |            |                    | Note: Soils field classified<br>in accordance with the<br>Unified Soil Classification<br>System. |                                                              |                              | 47                                                                                                   |             |
|                                                                                                                              |            |                    |                                                                                                  |                                                              |                              | Blows Per Foot: Number<br>required to drive 1 3/8"<br>ID splitspoon w/140 lb.<br>hammer falling 30". |             |

Hole No. **SH-289**

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC | INSTALLATION<br>SAVANNAH, GA.                                                                    |                              | SHEET 1<br>OF 1 SHEETS             |                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                                     |                              |                                    |                                                                                                                                             |
| 2. LOCATION (Coordinates or Station)<br>X-876210 Y-753527 GA. EAST                                                           |              |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                              |                                    |                                                                                                                                             |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                              |                                    |                                                                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-289                                                            |              |                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>7                                                  |                              | DISTURBED<br>0<br>UNDISTURBED<br>0 |                                                                                                                                             |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                              |                                    |                                                                                                                                             |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            | 15. ELEVATION GROUND WATER<br>N/A                                                                |                              |                                    |                                                                                                                                             |
| 7. THICKNESS OF OVERBURDEN<br>61.0' (Water 40.0')                                                                            |              |                            | 16. DATE HOLE<br>STARTED<br>3 DEC 91                                                             |                              | COMPLETED<br>3 DEC 91              |                                                                                                                                             |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                            | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                              |                                    |                                                                                                                                             |
| 9. TOTAL DEPTH OF HOLE<br>61.0'                                                                                              |              |                            | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                              | Z                                  |                                                                                                                                             |
| 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                                             |              |                            |                                                                                                  |                              |                                    |                                                                                                                                             |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                | Z CORE<br>RECOV-<br>ERY<br>+ | BOX OR<br>SAMPLE<br>NO.<br>UAR     | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e<br>BLOWS                                          |
|                                                                                                                              |              |                            | Water<br>Bottom of Harbor 40.0'                                                                  |                              |                                    | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.4'.                                                                       |
| -40.0'                                                                                                                       | 40           |                            | (SP) Greyish-tan, coarse, poorly graded SAND. Trace of fine gravel & shell fragments.            |                              | 1                                  | No splitspoon recovery on first drive from 40.0' to 41.5'. Redrill to 41.5' then cont'd. drive to 43.0'. For sample #1 from 40.0' to 43.0'. |
| -44.5'                                                                                                                       | 45           |                            | (CH) Dark olive-grey, fat CLAY. Trace of silt.                                                   |                              | 2                                  |                                                                                                                                             |
|                                                                                                                              |              |                            |                                                                                                  |                              | 3                                  |                                                                                                                                             |
|                                                                                                                              | 50           |                            |                                                                                                  |                              |                                    |                                                                                                                                             |
| -52.0'                                                                                                                       |              |                            | Some fine sand.                                                                                  |                              | 4                                  |                                                                                                                                             |
| -55.0'                                                                                                                       | 55           |                            | (SC) Dark olive-grey to grey, clayey fine SAND.                                                  |                              | 5                                  |                                                                                                                                             |
| -58.0'                                                                                                                       |              |                            |                                                                                                  |                              | 6                                  |                                                                                                                                             |
| -61.0'                                                                                                                       | 60           |                            | (CH) Dark olive-grey, fat CLAY. Some silt & fine sand.                                           |                              | 7                                  |                                                                                                                                             |
|                                                                                                                              |              |                            | Bottom of Boring 61.0'                                                                           |                              |                                    |                                                                                                                                             |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                              |                                    | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".                                            |

Hole No. **SH 291**

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                               |                                | SHEET 1<br>OF 1 SHEETS                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/2" fish tail  |                                |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-877255 Y-753105 GA. EAST                                                           |       |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                                |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500     |                                |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-291                                                            |       |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 6 : 0 : 0      |                                |                                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES N/A                             |                                |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                        | 15. ELEVATION GROUND WATER N/A                              |                                |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN 60.0' (Water 38.9')                                                                               |       |                            |                                                                                                        | 16. DATE HOLE : STARTED : 17 NOV 91 : COMPLETED : 17 NOV 91 |                                |                                                                                                     |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                              |                                |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |       |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A                      |                                |                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.            |                                |                                                                                                     |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | % CORE<br>RECOVERY                                          | BOX OR<br>SAMPLE<br>NO.<br>JNR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                |  |
| 0.0'                                                                                                                         | 0     |                            |                                                                                                        |                                                             |                                | BLOWS                                                                                               |  |
|                                                                                                                              | 35    |                            |                                                                                                        |                                                             |                                | Scale change at 35.0'.                                                                              |  |
| -38.9'                                                                                                                       |       |                            | Bottom of Harbor 38.9'                                                                                 |                                                             |                                |                                                                                                     |  |
| -40.5'                                                                                                                       | 40    |                            | (SW) Tan, medium to fine grained SAND,<br>1-2% silt. Saturated, no odor.                               |                                                             | 1                              | 22                                                                                                  |  |
| -42.0'                                                                                                                       |       |                            | Trace of gravel.                                                                                       |                                                             |                                | 30                                                                                                  |  |
| -43.5'                                                                                                                       |       |                            | Shell fragments & trace of clay.                                                                       |                                                             |                                | 37                                                                                                  |  |
| -45                                                                                                                          | 45    |                            | Gray.                                                                                                  |                                                             | 2                              | 58                                                                                                  |  |
| -46.5'                                                                                                                       |       |                            | (MH) Green, stiff fat SILT. Moist, organic odor.                                                       |                                                             | 3                              | 24                                                                                                  |  |
|                                                                                                                              | 50    |                            |                                                                                                        |                                                             | 4                              | 21                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                             |                                | 16                                                                                                  |  |
|                                                                                                                              | 55    |                            |                                                                                                        |                                                             | 5                              | 18                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                             |                                | 27                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                             |                                | 20                                                                                                  |  |
| -60.0'                                                                                                                       | 60    |                            | Bottom of Boring 60.0'                                                                                 |                                                             | 8                              | 20                                                                                                  |  |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                             |                                | 16                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                             |                                | 41                                                                                                  |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                             |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30". |  |

hole NO. **SH-303**

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC | INSTALLATION<br>SAVANNAH, GA.                                                                    |                 | SHEET 1<br>OF 1 SHEETS              |                                                                                                                                                                               |       |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|--------------------------------------------------------------------------------------------------|-----------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                         |            |                            | 10. SIZE AND TYPE OF BIT 1 1/8" split spoon, 5/16" fishtail                                      |                 |                                     |                                                                                                                                                                               |       |
| 1. LOCATION (Coordinates or Station)<br>X=881230 Y=748639 GA. EAST                                                           |            |                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                 |                                     |                                                                                                                                                                               |       |
| 2. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FAILING 314                                           |                 |                                     |                                                                                                                                                                               |       |
| 3. HOLE NO. (As shown on drawing title and file number)<br>SH-303                                                            |            |                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                       |                 | DISTURBED 6 UNDISTURBED 0           |                                                                                                                                                                               |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            | 14. TOTAL NUMBER CORE BOXES 0                                                                    |                 |                                     |                                                                                                                                                                               |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            | 15. ELEVATION GROUND WATER N/A                                                                   |                 |                                     |                                                                                                                                                                               |       |
| 7. THICKNESS OF OVERBURDEN 60.2' (Water 40.7')                                                                               |            |                            | 16. DATE HOLE                                                                                    |                 | STARTED 9 JAN 92 COMPLETED 9 JAN 92 |                                                                                                                                                                               |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            | 17. ELEVATION TOP OF HOLE 0.0'                                                                   |                 |                                     |                                                                                                                                                                               |       |
| 9. TOTAL DEPTH OF HOLE 60.2'                                                                                                 |            |                            | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                           |                 | Z                                   |                                                                                                                                                                               |       |
|                                                                                                                              |            |                            | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                 |                                     |                                                                                                                                                                               |       |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>a                                                | % CORE RECOVERY | BOX OR SAMPLE NO.<br>JAN            | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significantly different from previous logs)<br>b                                                         | BLOWS |
|                                                                                                                              |            |                            | Water                                                                                            |                 |                                     | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 45.7'.                                                                                                      |       |
|                                                                                                                              | 40         |                            | Bottom of Harbor 40.7'                                                                           |                 |                                     |                                                                                                                                                                               |       |
| -40.7'                                                                                                                       |            |                            | (SP) greyish-tan, coarse, poorly graded SAND. Trace of silt & small shell fragments.             |                 | 1                                   | No split spoon recovery on first drive to 42.2'. Redrill to 44.2' then cont'd. drive to 43.7'. Jar sample 1 from 40.7' to 43.7'.<br>Began using Zeagol drilling mud at 51.2'. | 9     |
| -43.7'                                                                                                                       |            |                            | Some fine gravel.                                                                                |                 |                                     |                                                                                                                                                                               | 39    |
| -45.2'                                                                                                                       | 45         |                            | Trace of clay.                                                                                   |                 | 2                                   |                                                                                                                                                                               | 22    |
| -46.7'                                                                                                                       |            |                            | (SC) Grey, medium to coarse, clayey SAND. Some fine gravel & small shell fragments.              |                 | 3                                   |                                                                                                                                                                               | 14    |
| -48.2'                                                                                                                       |            |                            | Coarse sand, several decomposed wood particles approx. 0.1" thick.                               |                 |                                     |                                                                                                                                                                               | 26    |
| -49.7'                                                                                                                       | 50         |                            | Medium to coarse sand, trace of fine gravel, no wood particles.                                  |                 |                                     |                                                                                                                                                                               | 61    |
| -51.2'                                                                                                                       |            |                            | Dark olive-gray, fine clayey SAND. Some silt.                                                    |                 | 4                                   |                                                                                                                                                                               | 28    |
|                                                                                                                              |            |                            |                                                                                                  |                 |                                     |                                                                                                                                                                               | 39    |
|                                                                                                                              | 55         |                            |                                                                                                  |                 |                                     |                                                                                                                                                                               | 37    |
|                                                                                                                              |            |                            |                                                                                                  |                 | 5                                   |                                                                                                                                                                               | 33    |
|                                                                                                                              |            |                            |                                                                                                  |                 |                                     |                                                                                                                                                                               | 32    |
|                                                                                                                              |            |                            |                                                                                                  |                 |                                     |                                                                                                                                                                               | 24    |
| -60.2'                                                                                                                       | 60         |                            | Bottom of Boring 60.2'                                                                           |                 | 6                                   |                                                                                                                                                                               | 20    |
|                                                                                                                              |            |                            |                                                                                                  |                 |                                     |                                                                                                                                                                               |       |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                 |                                     | BLOWS PER FOOT:<br>Number required to drive 1 1/8" I.D. split spoon w/140 lb. hammer falling 30".                                                                             |       |



Hole No. SH-304

| DRILLING LOG                                                                                                                 |               | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                                                   |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                   |       |
|------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/8" fishtail                       |                                |                                                                                                                                          |       |
| 2. LOCATION (Coordinates or Station)<br>X=881382 Y=748106 GA. EAST                                                           |               |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                               |                                |                                                                                                                                          |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314                           |                                |                                                                                                                                          |       |
| 4. HOLE NO. (As shown on drawing title and title number)<br>SH-304                                                           |               |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED : UNDISTURBED<br>: 5 : 0 |                                |                                                                                                                                          |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES 0                                                   |                                |                                                                                                                                          |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                            |                                                                                                        | 15. ELEVATION GROUND WATER N/A                                                  |                                |                                                                                                                                          |       |
| 7. THICKNESS OF OVERBURDEN 59.9' (Water 41.9')                                                                               |               |                            |                                                                                                        | 16. DATE HOLE : STARTED : COMPLETED<br>: 9 JAN 92 : 9 JAN 92                    |                                |                                                                                                                                          |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |               |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                                                  |                                |                                                                                                                                          |       |
| 9. TOTAL DEPTH OF HOLE 59.9'                                                                                                 |               |                            |                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                        |                                |                                                                                                                                          |       |
|                                                                                                                              |               |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                |                                |                                                                                                                                          |       |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0.0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                      | % CORE<br>RECOV-<br>ERY                                                         | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                | BLOWS |
|                                                                                                                              |               |                            | Water                                                                                                  |                                                                                 |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 44.6'.                                                              |       |
|                                                                                                                              | 40            |                            | Bottom of Harbor 41.9'                                                                                 |                                                                                 |                                |                                                                                                                                          |       |
| -41.9'                                                                                                                       |               |                            | (SP) Greyish-tan, coarse, poorly graded SAND.<br>Trace of silt.                                        |                                                                                 | 1                              | No splitspoon recovery on first<br>drive to 43.4'. Redrill to 43.4'<br>then cont'd. drive to 44.9'. Jar<br>sample 1 from 41.9' to 44.9'. | 3     |
| -44.9'                                                                                                                       | 45            |                            | Fine to medium sand.                                                                                   |                                                                                 |                                |                                                                                                                                          | 35    |
| -46.4'                                                                                                                       |               |                            | (SC) Dark olive-grey, fine clayey SAND.<br>Same silt.                                                  |                                                                                 | 2                              |                                                                                                                                          | 34    |
|                                                                                                                              | 50            |                            |                                                                                                        |                                                                                 |                                |                                                                                                                                          | 40    |
|                                                                                                                              |               |                            |                                                                                                        |                                                                                 | 3                              |                                                                                                                                          | 26    |
|                                                                                                                              | 55            |                            |                                                                                                        |                                                                                 |                                |                                                                                                                                          | 26    |
|                                                                                                                              |               |                            |                                                                                                        |                                                                                 | 4                              |                                                                                                                                          | 53    |
|                                                                                                                              | 60            |                            |                                                                                                        |                                                                                 |                                |                                                                                                                                          | 44    |
| -59.9'                                                                                                                       |               |                            |                                                                                                        |                                                                                 | 5                              |                                                                                                                                          | 38    |
|                                                                                                                              |               |                            |                                                                                                        |                                                                                 |                                |                                                                                                                                          | 32    |
|                                                                                                                              |               |                            |                                                                                                        |                                                                                 |                                |                                                                                                                                          | 26    |
|                                                                                                                              |               |                            |                                                                                                        |                                                                                 |                                |                                                                                                                                          | 23    |
|                                                                                                                              |               |                            | Bottom of Boring 59.9'                                                                                 |                                                                                 |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30".                                      |       |
|                                                                                                                              |               |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                                                 |                                |                                                                                                                                          |       |

HOLE NO. **SH-307**

| DRILLING LOG                                                                                                                 |              | DIVISION SOUTH ATLANTIC |                                                                                                          | INSTALLATION SAVANNAH, GA.                                                                       |                                | SHEET 1 OF 1 SHEETS                                                                                                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                         |                                                                                                          | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5/8" FISHTAIL                                        |                                |                                                                                                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-882201 Y-746811 GA. EAST                                                           |              |                         |                                                                                                          | 11. DATUM FOR ELEVATION SHOWN (FTM or MSL)<br>MLW                                                |                                |                                                                                                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                         |                                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                                |                                                                                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-307                                                            |              |                         |                                                                                                          | BURDEN SAMPLES TAKEN                                                                             |                                | DISTURBED<br>6<br>UNDISTURBED<br>0                                                                                                                                                     |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                         |                                                                                                          | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                                |                                                                                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                         |                                                                                                          | 15. ELEVATION GROUND WATER N/A                                                                   |                                |                                                                                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 60.6' (Water 38.8')                                                                               |              |                         |                                                                                                          | 16. DATE HOLE STARTED<br>16 MAR 92 COMPLETED<br>16 MAR 92                                        |                                |                                                                                                                                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                         |                                                                                                          | 17. ELEVATION TOP OF HOLE 0.0'                                                                   |                                |                                                                                                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE 60.6'                                                                                                 |              |                         |                                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                           |                                |                                                                                                                                                                                        |  |
|                                                                                                                              |              |                         |                                                                                                          | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                                |                                                                                                                                                                                        |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>e             | CLASSIFICATION OF MATERIALS<br>(Description)<br>#                                                        | % CORE<br>RECOV-<br>ERY<br>%                                                                     | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br># BLOWS                                                                                        |  |
|                                                                                                                              |              |                         | Water                                                                                                    |                                                                                                  |                                | Scale change at 35.0'. Set 6" diameter casing by own weight to 43.8'. Then pushed with Kelley to 45.3'.                                                                                |  |
|                                                                                                                              | 35           |                         | Bottom of Harbor 38.8'                                                                                   |                                                                                                  |                                |                                                                                                                                                                                        |  |
|                                                                                                                              | -38.8'       |                         | (SP) Light brownish-grey, medium to coarse, poorly graded SAND. Some small shell fragments.              |                                                                                                  | 1                              | Weight of rods drove splitspoon from 38.8' to 42.6', 45.8'-47.1' Very soft clay. Last hammer blow drove splitspoon to 47.3', cont'd. drive to 48.6'. For sample 3 from 45.6' to 48.6'. |  |
|                                                                                                                              | -42.6'       |                         | Coarse sand, trace of fine gravel & small shell fragments.                                               |                                                                                                  |                                |                                                                                                                                                                                        |  |
|                                                                                                                              | -44.1'       |                         | (SC) Very dark grey to black medium to coarse clayey SAND. Trace of fine gravel & small shell fragments. |                                                                                                  | 2                              |                                                                                                                                                                                        |  |
|                                                                                                                              | -45.6'       |                         | (CH) Grey, fat CLAY. Trace of fine sand.                                                                 |                                                                                                  | 3                              |                                                                                                                                                                                        |  |
|                                                                                                                              | 50           |                         |                                                                                                          |                                                                                                  | 4                              |                                                                                                                                                                                        |  |
|                                                                                                                              | 55           |                         |                                                                                                          |                                                                                                  | 5                              |                                                                                                                                                                                        |  |
|                                                                                                                              | -59.1'       |                         | (SC) Olive, fine, clayey SAND.                                                                           |                                                                                                  | 6                              |                                                                                                                                                                                        |  |
|                                                                                                                              | -60.6'       |                         | Bottom of Boring 60.6'                                                                                   |                                                                                                  |                                |                                                                                                                                                                                        |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |              |                         |                                                                                                          | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |                                |                                                                                                                                                                                        |  |

Hole No. **SH-312**

| DRILLING LOG                                                                                                                 |            | DIVISION<br><b>SOUTH ATLANTIC</b> |                                                                                                  | INSTALLATION<br><b>SAVANNAH, GA.</b>                                    |                                | SHEET 1<br>of 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                               |            |                                   |                                                                                                  | 10. SIZE AND TYPE OF BIT<br><b>1 1/8" split spoon, 5 1/2" fish tail</b> |                                |                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br><b>X-884220 Y-745272 GA. EAST</b>                                                    |            |                                   |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                |                                |                                                                                                      |  |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |            |                                   |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>FALLING 314</b>           |                                |                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>SH-312</b>                                                     |            |                                   |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br><b>6</b>                  |                                | DISTURBED<br><b>0</b>                                                                                |  |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |            |                                   |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br><b>0</b>                                 |                                | UNDISTURBED<br><b>0</b>                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                                   |                                                                                                  | 15. ELEVATION GROUND WATER<br><b>N/A</b>                                |                                |                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br><b>60.6' (Water 41.1')</b>                                                                     |            |                                   |                                                                                                  | 16. DATE HOLE<br><b>STARTED 11 JAN 92</b>                               |                                | COMPLETED<br><b>11 JAN 92</b>                                                                        |  |
| 8. DEPTH DRILLED INTO ROCK<br><b>0.0'</b>                                                                                    |            |                                   |                                                                                                  | 17. ELEVATION TOP OF HOLE<br><b>0.0'</b>                                |                                | 18. TOTAL CORE RECOVERY FOR BORING<br><b>N/A</b>                                                     |  |
| 9. TOTAL DEPTH OF HOLE<br><b>60.6'</b>                                                                                       |            |                                   |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>                 |                                |                                                                                                      |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>e                       | CLASSIFICATION OF MATERIALS<br>(Description)<br>4                                                | Z. CORE<br>RECOV-<br>ERY                                                | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>BLOWS        |  |
|                                                                                                                              |            |                                   | Water                                                                                            |                                                                         |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 45.1'.                                |  |
| -41.1'                                                                                                                       | 40         |                                   | Bottom of Harbor 41.1'                                                                           |                                                                         |                                |                                                                                                      |  |
|                                                                                                                              |            |                                   | (SP) Tanish-grey, poorly graded, fine to medium SAND. Some silt, trace of small shell fragments. |                                                                         | 1                              | Weight of rods drove split spoon from 41.1' to 44.0'; continued drive to 44.1' with one hammer blow. |  |
| -44.1'                                                                                                                       | 45         |                                   | (SM) Grey, fine, silty SAND. Trace of small shell fragments.                                     |                                                                         | 2                              | Began using Zeigel drilling mud at 47.1'.                                                            |  |
| -45.6'                                                                                                                       |            |                                   | Trace of clay & mica.                                                                            |                                                                         |                                |                                                                                                      |  |
| -47.1'                                                                                                                       |            |                                   | No clay or shell fragments.                                                                      |                                                                         | 3                              |                                                                                                      |  |
| -48.6'                                                                                                                       |            |                                   | Trace of clay & shell fragments.                                                                 |                                                                         |                                |                                                                                                      |  |
| -50.1'                                                                                                                       | 50         |                                   | Fine to medium sand, large amount of small shell fragments.                                      |                                                                         |                                |                                                                                                      |  |
| -53.1'                                                                                                                       | 55         |                                   | (SC) Grey, fine, clayey SAND. Trace of mica, some clay layers up to 0.2' thick.                  |                                                                         | 4                              |                                                                                                      |  |
|                                                                                                                              |            |                                   |                                                                                                  |                                                                         | 5                              |                                                                                                      |  |
| -60.3'                                                                                                                       | 60         |                                   | Obs.                                                                                             |                                                                         | 6                              |                                                                                                      |  |
| -60.6'                                                                                                                       |            |                                   | Bottom of Boring 60.6'                                                                           |                                                                         |                                |                                                                                                      |  |
|                                                                                                                              |            |                                   | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                         |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/8" I.D. split spoon w/140 lb. hammer falling 30".    |  |

Hole No. SH-314

| DRILLING LOG                                                                                                                 |            | DIRECTION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                 |                                | SHEET 1<br>OF 1 SHEETS                                                                    |                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                             |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/8" split spoon, 5/8" fishtail |                                |                                                                                           |                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br>X=885539 Y=744298 GA. EAST                                                           |            |                             |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW             |                                |                                                                                           |                                                                                                     |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                             |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FAILING 314        |                                |                                                                                           |                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-314                                                            |            |                             |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                    |                                | DISTURBED<br>5<br>UNDISTURBED<br>0                                                        |                                                                                                     |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                             |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                              |                                |                                                                                           |                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                             |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                |                                |                                                                                           |                                                                                                     |
| 7. THICKNESS OF OVERBURDEN<br>60.8' (Water 38.3')                                                                            |            |                             |                                                                                                  | 16. DATE HOLE                                                 |                                | STARTED<br>11 JAN 92<br>COMPLETED<br>11 JAN 92                                            |                                                                                                     |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                             |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                             |                                |                                                                                           |                                                                                                     |
| 9. TOTAL DEPTH OF HOLE<br>60.8'                                                                                              |            |                             |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                   |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |            |                             |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |                                |                                                                                           |                                                                                                     |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                 | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                | % CORE<br>RECOVERY<br>*                                       | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |                                                                                                     |
|                                                                                                                              |            |                             | Water                                                                                            |                                                               |                                |                                                                                           | Scale change at 35.0'. Set 6" diameter casing by own weight to 45.7'. & pushed with Kelly to 46.2'. |
|                                                                                                                              | 35         |                             | Bottom of Harbor 38.3'                                                                           |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | 40         |                             | (SM) Dark grey to black, fine to medium silty SAND. Some clay, trace of small shell fragments.   |                                                               | 1                              |                                                                                           | Weight of rods drove split spoon from 38.3' to 44.0'. Cont'd. drive to 44.3' with one hammer blow.  |
|                                                                                                                              | 44.3'      |                             | (SC) Grey, fine, clayey SAND. Some clay layers up to 0.2' thick, trace of silt.                  |                                                               | 2                              |                                                                                           |                                                                                                     |
|                                                                                                                              | 45         |                             |                                                                                                  |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | 50         |                             |                                                                                                  |                                                               | 3                              |                                                                                           |                                                                                                     |
|                                                                                                                              | 51.8'      |                             | Trace of small shell fragments.                                                                  |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | 54.8'      |                             | Medium to coarse clayey sand, some shell fragments & sand layers up to 0.1' thick.               |                                                               | 4                              |                                                                                           |                                                                                                     |
|                                                                                                                              | 56.3'      |                             | Same as from 44.3' to 54.8'.                                                                     |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | 57.8'      |                             | Fine, clayey sand, some fine silty sand layers up to 0.3' thick.                                 |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | 59.3'      |                             | (SM) Grey, fine silty SAND.                                                                      |                                                               | 5                              |                                                                                           |                                                                                                     |
|                                                                                                                              | 60         |                             |                                                                                                  |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              | 60.8'      |                             | Bottom of Boring 60.8'                                                                           |                                                               |                                |                                                                                           |                                                                                                     |
|                                                                                                                              |            |                             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                               |                                |                                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 1/8" I.D. split spoon w/140 lb. hammer falling 30".   |

| DRILLING LOG                                                                                                                 |             | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                                | JOB NO. <b>SH-316</b>                                                                            |  | SHEET 1<br>OF 1 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|--|------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL |                                |                                                                                                  |  |                        |  |
| 2. LOCATION (Coordinates or Station)<br>X-886334 Y-743216 GA. EAST                                                           |             |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or NSL)<br>MLW            |                                |                                                                                                  |  |                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                                |                                                                                                  |  |                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-316                                                            |             |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6              |                                | DISTURBED<br>6                                                                                   |  | UNDISTURBED<br>0       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                                |                                                                                                  |  |                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                  | 15. ELEVATION GROUND WATER<br>N/A                            |                                |                                                                                                  |  |                        |  |
| 7. THICKNESS OF OVERBURDEN<br>59.6' (Water 41.6')                                                                            |             |                            |                                                                                                  | 16. DATE HOLE<br>13 NOV 91                                   |                                | STARTED<br>13 NOV 91                                                                             |  | COMPLETED<br>13 NOV 91 |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0'                              |                                |                                                                                                  |  |                        |  |
| 9. TOTAL DEPTH OF HOLE<br>59.6'                                                                                              |             |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING/A<br>X                    |                                |                                                                                                  |  |                        |  |
|                                                                                                                              |             |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                                |                                                                                                  |  |                        |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0' | LEGEND<br>a                | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                | % CORE<br>RECOVERY<br>e                                      | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g        |  |                        |  |
|                                                                                                                              | 40          |                            | Water                                                                                            |                                                              |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.8'.                            |  |                        |  |
| -41.6'                                                                                                                       |             |                            | Bottom of Harbor 41.6'                                                                           |                                                              |                                |                                                                                                  |  |                        |  |
| -43.1'                                                                                                                       |             |                            | (SC) Grey, fine clayey SAND. Some silt, trace of fine gravel & shell fragments.                  |                                                              | 1                              |                                                                                                  |  |                        |  |
|                                                                                                                              | 45          |                            | (SM) Grey, fine to medium silty SAND. Trace of clay & shell fragments.                           |                                                              | 2                              | Began using Veriflo drilling mud at 44.6'.                                                       |  |                        |  |
| -46.1'                                                                                                                       |             |                            | No clay.                                                                                         |                                                              | 3                              |                                                                                                  |  |                        |  |
| -49.1'                                                                                                                       |             |                            | Trace of clay.                                                                                   |                                                              |                                |                                                                                                  |  |                        |  |
| -52.1'                                                                                                                       |             |                            | Medium sand.                                                                                     |                                                              | 4                              |                                                                                                  |  |                        |  |
|                                                                                                                              | 55          |                            |                                                                                                  |                                                              | 5                              |                                                                                                  |  |                        |  |
| -58.1'                                                                                                                       |             |                            | (SC) Greenish-grey, fine clayey SAND. Some thick clay layers up to 0.2" thick.                   |                                                              | 6                              |                                                                                                  |  |                        |  |
| -59.6'                                                                                                                       | 60          |                            | Bottom of Boring 59.6'                                                                           |                                                              |                                |                                                                                                  |  |                        |  |
|                                                                                                                              |             |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |                        |  |

Hole No. SH-318

| DRILLING LOG                                                                                                                 |       | REGION SOUTH ATLANTIC |                                                                      | INSTALLATION SAVANNAH, GA.                                                                        |                   | SHEET 1 OF 2 SHEETS                                                                                          |       |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                      | 10. SIZE AND TYPE OF BIT 1 1/2" split spoon, 5 1/2" fish tail, 4 x 5 1/2" carbide bit             |                   |                                                                                                              |       |
| 2. LOCATION (Coordinates or Station)<br>X=887004 Y=743916 GA. EAST                                                           |       |                       |                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                 |                   |                                                                                                              |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                       |                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                                            |                   |                                                                                                              |       |
| 4. HOLE NO. (As shown on drawing title and file number) SH-318                                                               |       |                       |                                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                        |                   | DISTURBED 8 UNDISTURBED 0                                                                                    |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                       |                                                                      | 14. TOTAL NUMBER CORE BOXES                                                                       |                   | 1                                                                                                            |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                      | 15. ELEVATION GROUND WATER                                                                        |                   | N/A                                                                                                          |       |
| 7. THICKNESS OF OVERBURDEN 73.5'                                                                                             |       |                       |                                                                      | 16. DATE HOLE                                                                                     |                   | STARTED 30 AUG 92 COMPLETED 30 AUG 92                                                                        |       |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                       |                                                                      | 17. ELEVATION TOP OF HOLE                                                                         |                   | 0.0'                                                                                                         |       |
| 9. TOTAL DEPTH OF HOLE 73.5'                                                                                                 |       |                       |                                                                      | 18. TOTAL CORE RECOVERY FOR BORING                                                                |                   | 86 %                                                                                                         |       |
|                                                                                                                              |       |                       |                                                                      | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                  |                   |                                                                                                              |       |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                         | % CORE RECOVERY                                                                                   | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                            | BLOWS |
| 0.0                                                                                                                          | 0.0   |                       |                                                                      |                                                                                                   |                   |                                                                                                              |       |
|                                                                                                                              |       |                       | Water                                                                |                                                                                                   |                   | Scale change at 35.0'. Set 8" diameter casing by own weight to 44.5'.                                        |       |
|                                                                                                                              | 35    |                       | Bottom of Harbor 36.0'                                               |                                                                                                   |                   |                                                                                                              |       |
| -36.0'                                                                                                                       |       |                       | (MD) Dark gray to black clayey SILT, some fine sand.                 |                                                                                                   |                   | Weight of rods drove split spoon from 36.0' to 44.4'.                                                        |       |
|                                                                                                                              | 40    |                       |                                                                      |                                                                                                   | 1                 | No split spoon recovery from 47.4' to 48.9'. Soil classified from fish tail cuttings.                        |       |
| -44.4'                                                                                                                       |       |                       | (SM) Dark gray fine silty SAND.                                      |                                                                                                   |                   | No split spoon drives taken from 54.9' to 59.4' and 60.9' to 65.4'. Soil classified from fish tail cuttings. |       |
| -45.9'                                                                                                                       | 45    |                       | Fine to medium sand.                                                 |                                                                                                   | 2                 | Grouted hole from 60.5' to 73.5'.                                                                            |       |
| -48.9'                                                                                                                       |       |                       | (SP) Gray fine to medium poorly graded SAND, trace of silt and clay. |                                                                                                   | 3                 |                                                                                                              |       |
| -51.9'                                                                                                                       | 50    |                       |                                                                      |                                                                                                   |                   |                                                                                                              |       |
| -53.4'                                                                                                                       |       |                       | (SM) Gray fine clayey SAND, calcareous.                              |                                                                                                   | 4                 |                                                                                                              |       |
| -54.9'                                                                                                                       | 55    |                       | (SC) Gray fine clayey SAND, calcareous.                              |                                                                                                   | 5                 |                                                                                                              |       |
|                                                                                                                              |       |                       | Wash.                                                                |                                                                                                   |                   |                                                                                                              |       |
| -59.4'                                                                                                                       |       |                       |                                                                      |                                                                                                   |                   |                                                                                                              |       |
| -60.0'                                                                                                                       | 60    |                       |                                                                      |                                                                                                   | 6                 |                                                                                                              |       |
| Continued on sheet 2                                                                                                         |       |                       |                                                                      |                                                                                                   |                   |                                                                                                              |       |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                       |                                                                      | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |                   |                                                                                                              |       |

| DRILLING LOG (Cont sheet)            |       | ELEVATION TOP OF HOLE<br>0.0' MLW                                                   |                                                                                                                 | Hole No. SH-318    |                                |                                                                                    |
|--------------------------------------|-------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |       |                                                                                     | INSTALLATION<br>Savannah, Ga.                                                                                   |                    | SHEET 2<br>OF 2 SHEETS         |                                                                                    |
| ELEVATION                            | DEPTH | LEGEND                                                                              | CLASSIFICATION OF MATERIALS<br>(Description)                                                                    | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>watering, etc., if significant) |
| -60.0'                               | 60    |                                                                                     |                                                                                                                 |                    |                                |                                                                                    |
| -60.9'                               |       |    | (SC) Gray fine silty SAND, calcareous.                                                                          |                    |                                |                                                                                    |
|                                      |       |    | (CH) Gray fat CLAY, some fine sand,<br>slightly calcareous. (Wash sample)                                       |                    | 7                              | Began coring at 69.9'.<br>Scale change at 70.0'.                                   |
| -65.4'                               | 65    |    | (SM) Gray fine to medium silty SAND, trace<br>of small shell fragments, slightly calcareous.                    |                    | 8                              |                                                                                    |
| -70.8'                               | 70    |    | (CH) Gray fat clay, very stiff to hard,<br>trace of fine to medium sand in thin<br>lenses, slightly calcareous. | 100%               |                                | Pull-1<br>From 69.9', run 1.4' to 71.3' rec 1.4'                                   |
|                                      | 72    |   |                                                                                                                 | 77%                | Box<br>1                       | Pull-2<br>From 71.3', run 2.2' to 73.5' rec 1.7'<br>C. L. 0.5'                     |
| -73.0'                               |       |  | Core loss.                                                                                                      |                    |                                |                                                                                    |
| -73.5'                               |       |                                                                                     | Bottom of Boring 73.5'                                                                                          |                    |                                |                                                                                    |
|                                      | 74    |                                                                                     |                                                                                                                 |                    |                                |                                                                                    |

HOLE NO. **SH-319**

| DRILLING LOG                                                                                                                 |             | DIRECTION<br><b>SOUTH ATLANTIC</b> |                                                                                            | INSTALLATION<br><b>SAVANNAH, GA.</b>                                                                 |                                | SHEET 1<br>OF 1 SHEETS                                                                    |                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                               |             |                                    |                                                                                            | 10. SIZE AND TYPE OF BIT <b>1 1/2" split spoon, 5/8" fishtail</b>                                    |                                |                                                                                           |                                                                                                                                                |
| 2. LOCATION (Coordinates or Station)<br><b>X=889196 Y=742798 GA. EAST</b>                                                    |             |                                    |                                                                                            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                                             |                                |                                                                                           |                                                                                                                                                |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |             |                                    |                                                                                            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>FAILING 314</b>                                        |                                |                                                                                           |                                                                                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)<br><b>SH-319</b>                                                     |             |                                    |                                                                                            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br><b>8</b>                                               |                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br><b>8</b>                                    |                                                                                                                                                |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |             |                                    |                                                                                            | 14. TOTAL NUMBER CORE BOXES<br><b>0</b>                                                              |                                | 14. TOTAL NUMBER CORE BOXES<br><b>0</b>                                                   |                                                                                                                                                |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                                    |                                                                                            | 15. ELEVATION GROUND WATER<br><b>N/A</b>                                                             |                                | 15. ELEVATION GROUND WATER<br><b>N/A</b>                                                  |                                                                                                                                                |
| 7. THICKNESS OF OVERBURDEN <b>59.8' (Water 38.8')</b>                                                                        |             |                                    |                                                                                            | 16. DATE HOLE<br><b>12 JAN 92</b>                                                                    |                                | 16. DATE HOLE<br><b>12 JAN 92</b>                                                         |                                                                                                                                                |
| 8. DEPTH DRILLED INTO ROCK <b>0.0'</b>                                                                                       |             |                                    |                                                                                            | 17. ELEVATION TOP OF HOLE<br><b>0.0'</b>                                                             |                                | 17. ELEVATION TOP OF HOLE<br><b>0.0'</b>                                                  |                                                                                                                                                |
| 9. TOTAL DEPTH OF HOLE <b>59.8'</b>                                                                                          |             |                                    |                                                                                            | 18. TOTAL CORE RECOVERY FOR BORING<br><b>N/A</b>                                                     |                                | 18. TOTAL CORE RECOVERY FOR BORING<br><b>N/A</b>                                          |                                                                                                                                                |
|                                                                                                                              |             |                                    |                                                                                            | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>                                              |                                |                                                                                           |                                                                                                                                                |
| ELEVATION<br>0+0'                                                                                                            | DEPTH<br>0' | LEGEND<br>e                        | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                          | % CORE<br>RECOVERY                                                                                   | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e |                                                                                                                                                |
|                                                                                                                              |             |                                    | Water.                                                                                     |                                                                                                      |                                |                                                                                           | Scale change at 35.0'.<br>Set 6" diameter casing by own<br>weight to 43.8'.                                                                    |
|                                                                                                                              | 38          |                                    | Bottom of Harbor 38.8'                                                                     |                                                                                                      |                                |                                                                                           |                                                                                                                                                |
| -38.8'                                                                                                                       | 40          |                                    | (SP) Tan, fine to medium, poorly graded<br>SAND. Trace of silt.                            |                                                                                                      | 1                              |                                                                                           | No split spoon recovery on first drive.<br>Redrove 40.3', then cont'd. drive<br>to 41.8'. Jar sample 1 from 38.8'<br>to 41.8'.                 |
| -41.8'                                                                                                                       |             |                                    | (MT) Dark grey to black clayey SILT. Some fine<br>to medium sand, trace of wood particles. |                                                                                                      | 2                              |                                                                                           | Began using Zeogel drilling mud at<br>43.3'.                                                                                                   |
| -43.3'                                                                                                                       |             |                                    | (SM) Dark grey to black, silty, medium to<br>coarse SAND.                                  |                                                                                                      | 3                              |                                                                                           | No split spoon recovery on drive<br>from 47.8' to 49.3'. Redrove to<br>49.3' then cont'd. drive to 50.8'.<br>Jar sample 5 from 47.8' to 50.8'. |
| -44.8'                                                                                                                       | 45          |                                    | (SP) Tanish, light grey, coarse, poorly<br>graded SAND.                                    |                                                                                                      | 4                              |                                                                                           |                                                                                                                                                |
| -46.3'                                                                                                                       |             |                                    | Some fine gravel.                                                                          |                                                                                                      |                                |                                                                                           |                                                                                                                                                |
| -47.8'                                                                                                                       |             |                                    | (SC) Very dark grey, fine to medium, clayey<br>SAND.                                       |                                                                                                      | 5                              |                                                                                           |                                                                                                                                                |
| -53.5'                                                                                                                       |             |                                    | (SM) Very dark grey, fine to medium<br>silty SAND.                                         |                                                                                                      | 6                              |                                                                                           |                                                                                                                                                |
| -55.3'                                                                                                                       | 55          |                                    | (SC) Dark grey, fine clayey SAND.                                                          |                                                                                                      | 7                              |                                                                                           |                                                                                                                                                |
| -56.8'                                                                                                                       |             |                                    | Some layers of fine to medium silty sand<br>up to 0.3' thick.                              |                                                                                                      |                                |                                                                                           |                                                                                                                                                |
| -58.3'                                                                                                                       |             |                                    | (SM) Dark grey, fine to medium, silty SAND.<br>Some clay.                                  |                                                                                                      | 8                              |                                                                                           |                                                                                                                                                |
| -59.8'                                                                                                                       | 60          |                                    | Bottom of Boring 59.8'                                                                     |                                                                                                      |                                |                                                                                           |                                                                                                                                                |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.                       |             |                                    |                                                                                            | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>split spoon w/140 lb. hammer falling 30". |                                |                                                                                           |                                                                                                                                                |



HOLE NO. SH-321

| DRILLING LOG                                                                                                                 |       | DIVISION<br>SOUTH ATLANTIC |                                                                                                        | INSTALLATION<br>SAVANNAH, GA.                             |                         | SHEET 1<br>OF 1 SHEETS                                                                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                            |                                                                                                        | 10. SIZE AND TYPE OF BIT 1 1/2" splitspoon, 5/8" flantail |                         |                                                                                                                                                        |  |
| 2. LOCATION (Coordinates or Station)<br>X=890781 Y=742579 GA. EAST                                                           |       |                            |                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                         |                                                                                                                                                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                            |                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALING 314     |                         |                                                                                                                                                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-321                                                            |       |                            |                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                         | DISTURBED 6<br>UNDISTURBED 0                                                                                                                           |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                            |                                                                                                        | 14. TOTAL NUMBER CORE BOXES 0                             |                         |                                                                                                                                                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                        | 15. ELEVATION GROUND WATER N/A                            |                         |                                                                                                                                                        |  |
| 7. THICKNESS OF OVERBURDEN 60.0' (Water 40.5')                                                                               |       |                            |                                                                                                        | 16. DATE HOLE                                             |                         | STARTED 12 JAN 92<br>COMPLETED 12 JAN 92                                                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                            |                         | 18. TOTAL CORE RECOVERY FOR BORING N/A x                                                                                                               |  |
| 9. TOTAL DEPTH OF HOLE 60.0'                                                                                                 |       |                            |                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                         |                                                                                                                                                        |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                           | % CORE<br>RECOVERY                                        | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drifting time, water loss, depth of<br>weathering, etc. if significant)                                                                    |  |
| 0.0'                                                                                                                         | 0     | *                          |                                                                                                        |                                                           |                         | BLOWS                                                                                                                                                  |  |
|                                                                                                                              |       |                            | Water                                                                                                  |                                                           |                         | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 46.2'.                                                                            |  |
| -40.5'                                                                                                                       | 40    |                            | Bottom of Harbor 40.5'                                                                                 |                                                           |                         |                                                                                                                                                        |  |
|                                                                                                                              |       |                            | (SP) Brownish-grey, medium to coarse poorly<br>graded SAND. Trace of shell fragments.                  |                                                           | 1                       | 0                                                                                                                                                      |  |
| -43.5'                                                                                                                       |       |                            | (SM) Dark grey to black, fine to medium<br>silty SAND.                                                 |                                                           | 2                       | 5                                                                                                                                                      |  |
| -45.0'                                                                                                                       | 45    |                            | (SP) Light grey, coarse, poorly graded SAND.<br>Trace of fine gravel.                                  |                                                           | 3                       | 24                                                                                                                                                     |  |
|                                                                                                                              |       |                            | Fine to medium sand, no gravel.                                                                        |                                                           |                         | Weight of rods drove splitspoon<br>from 40.5' to 44.6'. Cont'd. drive to<br>45.0' with 5 hammer blows.<br>Jar sample 2 from approx.<br>43.5' to 45.0'. |  |
| -48.0'                                                                                                                       |       |                            |                                                                                                        |                                                           |                         | 24                                                                                                                                                     |  |
| -51.0'                                                                                                                       | 50    |                            | (SC) Olive, fine clayey SAND.                                                                          |                                                           | 4                       | 32                                                                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                           |                         | 19                                                                                                                                                     |  |
|                                                                                                                              | 55    |                            |                                                                                                        |                                                           |                         | 12                                                                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                           |                         | 17                                                                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                           |                         | 12                                                                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                           | 5                       | 20                                                                                                                                                     |  |
|                                                                                                                              |       |                            |                                                                                                        |                                                           |                         | 13                                                                                                                                                     |  |
| -60.0'                                                                                                                       | 60    |                            | Bottom of Boring 60.0'                                                                                 |                                                           | 6                       | 15                                                                                                                                                     |  |
|                                                                                                                              |       |                            | NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |                                                           |                         | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D.<br>splitspoon w/140 lb. hammer falling 30".                                                    |  |

NOTE 140, SH 323

| DRILLING LOG                                                                                                                 |            | DIVISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                   |                              | SHEET 1 OF 1 SHEETS                                                                               |    |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|----|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                         |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL |                              |                                                                                                   |    |
| 2. LOCATION (Coordinates or Station)<br>X-892692 Y-742522 GA. EAST                                                           |            |                         |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                   |    |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                         |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314       |                              |                                                                                                   |    |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-323                                                            |            |                         |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>4              |                              | DISTURBED<br>0                                                                                    |    |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                         |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                              | UNDISTURBED<br>0                                                                                  |    |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                         |                                                                                                  | 15. ELEVATION GROUND WATER N/A                               |                              |                                                                                                   |    |
| 7. THICKNESS OF OVERBURDEN 59.7' (Water 43.2')                                                                               |            |                         |                                                                                                  | 16. DATE HOLE<br>14 NOV 91                                   |                              | STARTED<br>14 NOV 91                                                                              |    |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                         |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                              | COMPLETED<br>14 NOV 91                                                                            |    |
| 9. TOTAL DEPTH OF HOLE 59.7'                                                                                                 |            |                         |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                       |                              |                                                                                                   |    |
|                                                                                                                              |            |                         |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                                   |    |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         |    |
|                                                                                                                              | 40         |                         | Water                                                                                            |                                                              |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 43.9'.                             |    |
|                                                                                                                              |            |                         | Bottom of Harbor 43.2'                                                                           |                                                              |                              |                                                                                                   |    |
| -43.2'                                                                                                                       | 45         |                         | (SC) Olive-grey, fine clayey SAND.<br>Some silt, calcareous.                                     |                                                              | 1                            | Began using Verillo drilling mud at 44.7'.                                                        | 8  |
|                                                                                                                              |            |                         |                                                                                                  |                                                              | 14                           |                                                                                                   |    |
|                                                                                                                              | 2          |                         |                                                                                                  |                                                              | 16                           |                                                                                                   |    |
| 50                                                                                                                           |            |                         |                                                                                                  |                                                              | 18                           |                                                                                                   |    |
|                                                                                                                              | 3          |                         |                                                                                                  |                                                              | 19                           |                                                                                                   |    |
|                                                                                                                              | 55         |                         |                                                                                                  |                                                              |                              |                                                                                                   | 24 |
|                                                                                                                              |            |                         |                                                                                                  |                                                              |                              |                                                                                                   | 19 |
|                                                                                                                              |            |                         |                                                                                                  |                                                              |                              |                                                                                                   | 19 |
|                                                                                                                              |            |                         |                                                                                                  |                                                              |                              |                                                                                                   | 22 |
|                                                                                                                              | 60         |                         | Bottom of Boring 59.7'                                                                           |                                                              | 4                            |                                                                                                   | 21 |
| -59.7'                                                                                                                       |            |                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. split spoon w/140 lb. hammer falling 30". |    |

note no. SH-324

| DRILLING LOG                                                                                                                 |              | DIVISION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                |                              | SHEET 1<br>OF 1 SHEETS                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                            |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/8" splitspoon, 5/2" fishtail |                              |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>X-894691 Y-742055 GA. EAST                                                           |              |                            |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                              |                                                                                                   |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                            |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314       |                              |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-324                                                            |              |                            |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>5              |                              | DISTURBED<br>0                                                                                    |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                            |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                              | UNDISTURBED<br>0                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                                  | 15. ELEVATION GROUND WATER N/A                               |                              |                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 59.8' (WATER 43.3')                                                                               |              |                            |                                                                                                  | 16. DATE MOLE<br>22 FEB 92                                   |                              | STARTED<br>22 FEB 92                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                            |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                               |                              | COMPLETED<br>22 FEB 92                                                                            |  |
| 9. TOTAL DEPTH OF HOLE 59.8'                                                                                                 |              |                            |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A %                     |                              |                                                                                                   |  |
|                                                                                                                              |              |                            |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.             |                              |                                                                                                   |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>e                | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                | % CORE<br>RECOV-<br>ERY<br>JAR                               | BOX OR<br>SAMPLE<br>NO.<br>i | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>e         |  |
|                                                                                                                              |              |                            | Water                                                                                            |                                                              |                              | Scale change at 40.0'.                                                                            |  |
|                                                                                                                              | 40           |                            | Bottom of Harbor 43.3'                                                                           |                                                              |                              | Set 6" diameter casing by own weight to 45.8'.                                                    |  |
| -43.3'                                                                                                                       | 45           |                            | (SC) Very dark grey, fine to medium, clayey SAND. Trace of small shell fragments.                |                                                              | 1                            |                                                                                                   |  |
| -44.8'                                                                                                                       |              |                            | Medium to coarse sand.                                                                           |                                                              |                              |                                                                                                   |  |
| -46.3'                                                                                                                       |              |                            | (SP) Light grey, fine to medium, poorly graded SAND.                                             |                                                              | 2                            | Weight of rods drove splitspoon from 43.3' to 44.8'.                                              |  |
| -49.3'                                                                                                                       |              |                            | Trace of silt.                                                                                   |                                                              |                              | Began using Zeogel drilling mud at 43.3'.                                                         |  |
| -50.8'                                                                                                                       | 50           |                            |                                                                                                  |                                                              |                              |                                                                                                   |  |
| -52.3'                                                                                                                       |              |                            | (SM) Dark grey, fine, silty SAND. Trace of clay & mica.                                          |                                                              | 3                            |                                                                                                   |  |
| -53.8'                                                                                                                       |              |                            | Fine to medium sand. Trace of fine gravel. No clay.                                              |                                                              |                              |                                                                                                   |  |
| -55.3'                                                                                                                       | 55           |                            | Trace of wood fibers & clay.                                                                     |                                                              |                              |                                                                                                   |  |
| -56.8'                                                                                                                       |              |                            | No wood fibers, clay or gravel.                                                                  |                                                              | 4                            |                                                                                                   |  |
|                                                                                                                              |              |                            | Grey.                                                                                            |                                                              |                              |                                                                                                   |  |
| -59.8'                                                                                                                       | 60           |                            | Bottom of Boring 59.8'                                                                           |                                                              | 5                            |                                                                                                   |  |
|                                                                                                                              |              |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/8" I.D. splitspoon w/ 140 lb. hammer falling 30". |  |

# SAVANNAH HARBOR BORING LOGS

From Station 0+000

To

Station -14+000

Hole No. 1

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                          | INSTALLATION SAVST<br>Outer Channel                         |                          | HARBOUR                                                                                                                                                                                                        |  | SHEET 1<br>OF 1 SHEETS      |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |       |                            |                                                                                          | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                          |                                                                                                                                                                                                                |  |                             |  |
| 2. LOCATION (Coordinates or Station)<br>X896293 Y742092                                                                      |       |                            |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (FSM or ASL)<br>MLW           |                          |                                                                                                                                                                                                                |  |                             |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                          |                                                                                                                                                                                                                |  |                             |  |
| 4. HOLE NO. (As shown on drawing title and file number) 1                                                                    |       |                            |                                                                                          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                          | DISTURBED 3                                                                                                                                                                                                    |  | UNDISTURBED 0               |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                          | 14. TOTAL NUMBER CORE BOXES                                 |                          |                                                                                                                                                                                                                |  |                             |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                          | 15. ELEVATION GROUND WATER                                  |                          | 16. DATE HOLE                                                                                                                                                                                                  |  | STARTED 1978 COMPLETED 1978 |  |
| 7. THICKNESS OF OVERBURDEN 19.0'                                                                                             |       |                            |                                                                                          | 17. ELEVATION TOP OF HOLE                                   |                          |                                                                                                                                                                                                                |  |                             |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING %                        |                          |                                                                                                                                                                                                                |  |                             |  |
| 9. TOTAL DEPTH OF HOLE 19.0'                                                                                                 |       |                            |                                                                                          | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                          |                                                                                                                                                                                                                |  |                             |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE<br>RECOVERY                                          | BOX OR<br>SAMPLE<br>NARR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                              |  |                             |  |
| -25.9 MLW                                                                                                                    | 0 b   | c                          | d                                                                                        | e                                                           | f                        | g                                                                                                                                                                                                              |  |                             |  |
|                                                                                                                              |       |                            | SM - Black, slightly clayey silty medium to fine sand                                    |                                                             | 1                        | NOTE: Because of expansion and compaction of the core during the drilling process, "Bottom of Boring Depth" (column d) may not coincide with Thickness of Overburden (line 7) or total depth of hole (line 9). |  |                             |  |
|                                                                                                                              |       |                            | Gray, silty coarse and medium sand                                                       |                                                             |                          |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              | 5     |                            | White                                                                                    |                                                             |                          |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              |       |                            | SP-SM - White, slightly silty medium and coarse sand with 5% fine gravel                 |                                                             | 2                        |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              | 10    |                            | SM - Brown, silty coarse to fine sand with 10% fine gravel                               |                                                             | 3                        |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              | 15    |                            | ML - Green, clayey silt with 15% fine sand                                               |                                                             |                          |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              |       |                            | With 25% fine sand                                                                       |                                                             |                          |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              |       |                            | Bottom of Boring 19.0'                                                                   |                                                             |                          |                                                                                                                                                                                                                |  |                             |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems. |                                                             |                          |                                                                                                                                                                                                                |  |                             |  |

-44.9

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                | INSTALLATION<br>Sav. sh Harbor                              |                         | Hole No. 2                                                                                                                                                                                                                             |  | SHEET 1<br>OF 1 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| 1. PROJECT<br>Tybee Island Beach Erosion<br>Control Project                                                                  |       |                            |                                                                                                | 10. SIZE AND TYPE OF BIT<br>4" Casing tube                  |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 2. LOCATION (Coordinates or Station)<br>x896168 Y742583                                                                      |       |                            |                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>2                                                                 |       |                            |                                                                                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                         | DISTURBED<br>2                                                                                                                                                                                                                         |  | UNDISTURBED<br>0       |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                | 14. TOTAL NUMBER CORE BOXES                                 |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                | 15. ELEVATION GROUND WATER                                  |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 7. THICKNESS OF OVERBURDEN<br>11.7'                                                                                          |       |                            |                                                                                                | 16. DATE HOLE<br>STARTED 1978 COMPLETED 1978                |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                | 17. ELEVATION TOP OF HOLE<br>31.0' water depth              |                         |                                                                                                                                                                                                                                        |  |                        |  |
| 9. TOTAL DEPTH OF HOLE<br>11.7'                                                                                              |       |                            |                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING<br>5                     |                         |                                                                                                                                                                                                                                        |  |                        |  |
|                                                                                                                              |       |                            |                                                                                                | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                         |                                                                                                                                                                                                                                        |  |                        |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOVERY                                          | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                                                   |  |                        |  |
| -27.6 MLW                                                                                                                    | 0     | b                          |                                                                                                |                                                             |                         |                                                                                                                                                                                                                                        |  |                        |  |
|                                                                                                                              | 5     | c                          | SM - Gray, silty, coarse<br>medium sand with 10% fine<br>gravel                                |                                                             | 1                       | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, "Bottom<br>of Boring Depth" (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or total depth<br>of hole (line 9). |  |                        |  |
|                                                                                                                              | 10    |                            | With 30% fine and coarse<br>gravel<br>With clay seams 20%                                      |                                                             | 2                       |                                                                                                                                                                                                                                        |  |                        |  |
|                                                                                                                              |       |                            | Bottom of Boring 10.0'                                                                         |                                                             |                         |                                                                                                                                                                                                                                        |  |                        |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                                                             |                         |                                                                                                                                                                                                                                        |  |                        |  |

| DRILLING LOG                                                                                                              |       | DIVISION        |                                                                                                                 | INSTALLATION                                             |                   | Hole No. 16                                                                                                                                                                                                  |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|-----------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |       | South Atlantic  |                                                                                                                 | Savannah Harbor Outer Channel                            |                   | SHEET 1 OF 1 SHEETS                                                                                                                                                                                          |  |
| 2. LOCATION (Coordinates or Station)                                                                                      |       | X898124 Y742031 |                                                                                                                 | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                   |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                 |                                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW           |                   |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) 16                                                                |       |                 |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                   |                                                                                                                                                                                                              |  |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       |                 |                                                                                                                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                |                   | DISTURBED 7 UNDISTURBED 0                                                                                                                                                                                    |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                 |                                                                                                                 | 14. TOTAL NUMBER CORE BOXES                              |                   |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 18.0'                                                                                          |       |                 |                                                                                                                 | 15. ELEVATION GROUND WATER                               |                   |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                 |                                                                                                                 | 16. DATE HOLE STARTED 30 Aug 78 COMPLETED 30 Aug 78      |                   |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 18.0'                                                                                              |       |                 |                                                                                                                 | 17. ELEVATION TOP OF HOLE 41.0' water depth              |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 |                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING 18.4'                 |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 |                                                                                                                 | 19. SIGNATURE OF INSPECTOR R. V. O'Kelley                |                   |                                                                                                                                                                                                              |  |
| ELEVATION (MLW)                                                                                                           | DEPTH | LEGEND          | CLASSIFICATION OF MATERIALS (Description)                                                                       | % CORE RECOVERY                                          | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |
| 36.3                                                                                                                      | 0     |                 |                                                                                                                 |                                                          | JAR               |                                                                                                                                                                                                              |  |
|                                                                                                                           | 5     |                 | SM - Dark gray, fine to medium sand with moderate amount of black organic silt and minor wood and shell content |                                                          | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                           |       |                 | Gray, slightly silty with some coarse sand                                                                      |                                                          | 2                 |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 | Moderately silty with moderate shell content                                                                    |                                                          | 3                 |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 | Slightly silty minor shell content                                                                              |                                                          | 4                 |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 |                                                                                                                 |                                                          | 5                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 15    |                 | MH - Gray, slightly fine, sandy inorganic silt, minor shell content                                             |                                                          | 6                 |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 | SM - Gray, slightly silty, fine to medium sand with some coarse sand and minor shell content                    |                                                          | 7                 |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 | Bottom of Boring 18.4                                                                                           |                                                          |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                 | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                        |                                                          |                   |                                                                                                                                                                                                              |  |

Hole No. 17

| DRILLING LOG                                                                                                              |       | DIVISION                                                 | INSTALLATION                                                                                                          | SHEET           |                       |                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT Tybee Island Beach Erosion Control Project                                                                        |       | South Atlantic                                           | Savannah Harbor Outer Channel                                                                                         | 1 OF 1 SHEETS   |                       |                                                                                                                                                                                                              |
| LOCATION (Coordinates or Station)                                                                                         |       | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| X898021 Y742381                                                                                                           |       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)               |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 1. DRILLING AGENCY Savannah District                                                                                      |       | MLW                                                      |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 2. HOLE NO. (As shown on drawing title and file number) 17                                                                |       | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 3. NAME OF DRILLER Charles Dill                                                                                           |       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN               |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 4. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | DISTURBED 4 UNDISTURBED 0                                |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 7. THICKNESS OF OVERBURDEN 18.0'                                                                                          |       | 14. TOTAL NUMBER CORE BOXES                              |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       | 15. ELEVATION GROUND WATER                               |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| 9. TOTAL DEPTH OF HOLE 18.0'                                                                                              |       | 16. DATE HOLE STARTED 30 Aug 78 COMPLETED 30 Aug 78      |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
|                                                                                                                           |       | 17. ELEVATION TOP OF HOLE 43.0' water depth              |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
|                                                                                                                           |       | 18. TOTAL CORE RECOVERY FOR BORING 15.8' %               |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
|                                                                                                                           |       | 19. SIGNATURE OF INSPECTOR R. V. O'KELLEY                |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                                                   | CLASSIFICATION OF MATERIALS (Description)                                                                             | % CORE RECOVERY | BOX OR SAMPLE NO. JAR | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |
| 38' MLW                                                                                                                   | 0     | a b c                                                    | SM - Gray, silty, fine to medium sand with moderate shell content                                                     | *               | 1                     | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |
|                                                                                                                           | 5     |                                                          | MH - Gray, fine, sandy, slightly clayey silt with minor to moderate shell content                                     |                 | 2                     |                                                                                                                                                                                                              |
|                                                                                                                           |       |                                                          | SM - Light gray to gray, moderately silty, fine sand                                                                  |                 | 3                     |                                                                                                                                                                                                              |
|                                                                                                                           | 10    |                                                          | Light gray, slightly silty, fine to medium                                                                            |                 | 4                     |                                                                                                                                                                                                              |
|                                                                                                                           |       |                                                          | MH - Gray, moderately clayey silt with some vegetative matter. 9.8' to 10.1' layer of fine to medium sand and pebbles |                 | 5                     |                                                                                                                                                                                                              |
|                                                                                                                           | 15    |                                                          | SM - Light gray to gray slightly silty medium to coarse sand                                                          |                 | 6                     |                                                                                                                                                                                                              |
|                                                                                                                           |       |                                                          | Light gray, fine to medium                                                                                            |                 | 7                     |                                                                                                                                                                                                              |
|                                                                                                                           |       |                                                          | Sample loss                                                                                                           |                 |                       |                                                                                                                                                                                                              |
|                                                                                                                           |       |                                                          | Bottom of Boring 18.0'                                                                                                |                 |                       |                                                                                                                                                                                                              |
| NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                                  |       |                                                          |                                                                                                                       |                 |                       |                                                                                                                                                                                                              |



Hole No. 18

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                   | INSTALLATION<br>Savannah Harbor                                           |                       | SHEET<br>1 OF 1 SHEETS                                                                                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Tybee Island Beach Erosion Control Project                                                                     |       |                            |                                                                                                   | 10. SIZE AND TYPE OF BIT<br>4" Casing tube                                |                       |                                                                                                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X901710 Y742381                                                                      |       |                            |                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or ASL)<br>MLW                         |                       |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore               |                       |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>18                                                                |       |                            |                                                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 5 UNDISTURBED: 0 |                       |                                                                                                                                                                                                              |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                   | 14. TOTAL NUMBER CORE BOXES                                               |                       |                                                                                                                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                   | 15. ELEVATION GROUND WATER                                                |                       |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN<br>26.0'                                                                                          |       |                            |                                                                                                   | 16. DATE HOLE<br>STARTED: 1978 COMPLETED: 1978                            |                       |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                   | 17. ELEVATION TOP OF HOLE<br>17.0' water depth                            |                       |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE<br>26.0'                                                                                              |       |                            |                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>%                                   |                       |                                                                                                                                                                                                              |  |
|                                                                                                                              |       |                            |                                                                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist                   |                       |                                                                                                                                                                                                              |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                      | % CORE RECOVERY                                                           | BOX OR SAMPLE NO. JAR | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                            |  |
| -11.3 MLW                                                                                                                    | 0     |                            | ML - with organic matter 0.0' to 0.5' gray clayey silt with fine sand 15%                         |                                                                           | 1                     | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                              |       |                            | MH - Gray, fat, clayey silt woody lens 2.5'-2.6'                                                  |                                                                           | 2                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 5     |                            | SM - Gray silty medium-fine sand with coarse sand sized shells 3% Laminated silt lens 4.9' - 5.0' |                                                                           | 3                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 10    |                            | MH - Gray, fat, clayey, silt with medium sand 10% (Laminated lens of sand)                        |                                                                           |                       |                                                                                                                                                                                                              |  |
|                                                                                                                              | 15    |                            | Clayey sand lens 16.2' - 16.5'                                                                    |                                                                           |                       |                                                                                                                                                                                                              |  |
|                                                                                                                              | 20    |                            | Clayey silt with fine sand lenses 4%                                                              |                                                                           | 4                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 25    |                            | SM - Gray, silty sand, medium-fine                                                                |                                                                           |                       |                                                                                                                                                                                                              |  |
|                                                                                                                              |       |                            | MH - Gray fat, clayey silt with 10% fine sand                                                     |                                                                           |                       |                                                                                                                                                                                                              |  |
| -29.8                                                                                                                        |       |                            | SM - Gray, coarse-medium sand, slightly silty with 7% fine gravel                                 |                                                                           | 5                     |                                                                                                                                                                                                              |  |
|                                                                                                                              |       |                            | Bottom of Boring 28.5'                                                                            |                                                                           |                       | NOTE: Soil field classified in accordance with the Unified Soil Classification Systems.                                                                                                                      |  |

| DRILLING LOG                                                                                                              |       | DIVISION                                    |                                                                                         | INSTALLATION                                             |                   | Hole No.                                                                                                                                                                                                     |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| South Atlantic                                                                                                            |       | Savannah Harbor                             |                                                                                         | Outer Channel                                            |                   | 19                                                                                                                                                                                                           |  |
| PROJECT Tybee Island Beach Erosion Control Project                                                                        |       | 10. SIZE AND TYPE OF BIT 4" Casing tube     |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or SLL)               |                   | SHEET 1 OF 1 SHEETS                                                                                                                                                                                          |  |
| 2. LOCATION (Coordinates or Station) X904550 Y743500                                                                      |       | MLW                                         |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                   |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY Savannah District                                                                                      |       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN  |                                                                                         | DISTURBED 5                                              |                   | UNDISTURBED 0                                                                                                                                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number) 19                                                                |       | 14. TOTAL NUMBER CORE BOXES                 |                                                                                         | 15. ELEVATION GROUND WATER                               |                   |                                                                                                                                                                                                              |  |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       | 16. DATE HOLE STARTED                       |                                                                                         | 30 Aug 78                                                |                   | COMPLETED 30 Aug 78                                                                                                                                                                                          |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 17. ELEVATION TOP OF HOLE 42.0' water depth |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING 29.4'                 |                   | 19. SIGNATURE OF INSPECTOR R. V. O'KELLEY, Geologist                                                                                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN 29.4'                                                                                          |       | 8. DEPTH DRILLED INTO ROCK 0.0'             |                                                                                         | 9. TOTAL DEPTH OF HOLE 29.4'                             |                   |                                                                                                                                                                                                              |  |
| ELEVATION MLW                                                                                                             | DEPTH | LEGEND                                      | CLASSIFICATION OF MATERIALS (Description)                                               | % CORE RECOVERY                                          | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |
| -35.2                                                                                                                     | 0     | c                                           | SM - Gray, silty, fine to medium sand with high shell content                           |                                                          | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                           | 5     |                                             | Brownish green silty fine sand                                                          |                                                          | 2                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 10    |                                             |                                                                                         |                                                          | 3                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 15    |                                             |                                                                                         |                                                          | 4                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 20    |                                             |                                                                                         |                                                          | 5                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 25    |                                             |                                                                                         |                                                          |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                                             | Bottom of Boring 29.4'                                                                  |                                                          |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                                             | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                          |                   |                                                                                                                                                                                                              |  |

Hole No. 41

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                | INSTALLATION Savan 1 Harbor<br>Outer Channel                |                         | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion<br>Control Project                                                                     |       |                            |                                                                                                | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                         |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X908405 Y742953                                                                      |       |                            |                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                         |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                         |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title<br>and file number) 41                                                                |       |                            |                                                                                                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN              |                         | DISTURBED 5 UNOBTAINED 0                                                                                                                                                                                                             |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                | 14. TOTAL NUMBER CORE BOXES                                 |                         |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                | 15. ELEVATION GROUND WATER                                  |                         |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 27.0'                                                                                             |       |                            |                                                                                                | 16. DATE HOLE                                               |                         | STARTED 9 Sep 78 COMPLETED 9 Sep 78                                                                                                                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                | 17. ELEVATION TOP OF HOLE 21.0' water depth                 |                         |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 27.0'                                                                                                 |       |                            |                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING 30.0' %                  |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            |                                                                                                | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN            |                         |                                                                                                                                                                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOV-<br>ERY                                     | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                                                 |  |
| -16.3' MLW                                                                                                                   | 0     | c                          |                                                                                                | *                                                           | JAR                     |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 5     |                            | MH - Black, fine, sandy and<br>clayey silt, silt and sand<br>mixture                           |                                                             | 1                       | NOTE: Had 3.0' expansion<br>of sample during drilling                                                                                                                                                                                |  |
|                                                                                                                              | 10    |                            | SM - Gray, fine and medium<br>sand, interbedded with sea<br>shells, silt and sand<br>mixture   |                                                             | 2                       | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 15    |                            | SP - Gray, poorly graded<br>medium sand with sea shells<br>and fragments                       |                                                             | 3                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 20    |                            | Gray, soft silt layers                                                                         |                                                             | 4                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 25    |                            | CL - Gray, silty clay, soft                                                                    |                                                             | 5                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | Sand layer                                                                                     |                                                             | 6                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | Clay and sand mixture                                                                          |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | Bottom of Boring 27.5'                                                                         |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                                                             |                         |                                                                                                                                                                                                                                      |  |

Hole No. 42

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic |                                                                                         | INSTALLATION DATE<br>in situ                                |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |             |                            |                                                                                         | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                |                                                                                                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X909554 Y743848                                                                      |             |                            |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                                |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) 42                                                                   |             |                            |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                                | DISTURBED 3 UNDISTURBED 0                                                                                                                                                                                    |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |             |                            |                                                                                         | 14. TOTAL NUMBER CORE BOXES                                 |                                |                                                                                                                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                         | 15. ELEVATION GROUND WATER                                  |                                |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 10.0'                                                                                             |             |                            |                                                                                         | 16. DATE HOLE                                               |                                | STARTED 9 Sep 78 COMPLETED 9 Sep 78                                                                                                                                                                          |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                         | 17. ELEVATION TOP OF HOLE 42.0' water depth                 |                                |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 10.0'                                                                                                 |             |                            |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING 18.0' %                  |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              |             |                            |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. GRIFFIN            |                                |                                                                                                                                                                                                              |  |
| ELEVATION<br>MLW                                                                                                             | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f                                                                                                                    |  |
| -36.9                                                                                                                        | 0           |                            | SM - Green, fine cemented silty sand                                                    |                                                             | 1                              | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                              | 5           |                            | Fine, clayey, silty sand with some occasional small pebbles and few fossils             |                                                             | 2                              |                                                                                                                                                                                                              |  |
|                                                                                                                              | 10          |                            | Bottom of Boring 10.0'                                                                  |                                                             | 3                              |                                                                                                                                                                                                              |  |
| -40.9                                                                                                                        |             |                            |                                                                                         |                                                             |                                | NOTE: Had 8.0' expansion of sample during drilling.                                                                                                                                                          |  |
|                                                                                                                              |             |                            | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                             |                                |                                                                                                                                                                                                              |  |

| DRILLING LOG                                                                                                                 |       |        | DIVISION<br>South Atlantic                                                              |                    | INSTALLATION<br>Savannah River, GA                |                                                                                             | Hole No. SR-64<br>SHEET 1<br>OF 7 SHEETS |                        |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------------|--------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------|------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |       |        |                                                                                         |                    | 10. SIZE AND TYPE<br>3/8" ID Splitspoon           |                                                                                             |                                          |                        |
| 2. LOCATION (Coordinates or Station)<br>See Plan Sta 0+500N, R= 14"                                                          |       |        |                                                                                         |                    | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW |                                                                                             |                                          |                        |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |        |                                                                                         |                    | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>CME 75 |                                                                                             |                                          |                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SR-64                                                             |       |        |                                                                                         |                    | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN        |                                                                                             | DISTURBED<br>4                           | UNDISTURBED<br>0       |
| 5. NAME OF DRILLER<br>T. W. Scott                                                                                            |       |        |                                                                                         |                    | 14. TOTAL NUMBER CORE BOXES                       |                                                                                             | 15. ELEVATION GROUND WATER               |                        |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |        |                                                                                         |                    | 16. DATE HOLE                                     |                                                                                             | STARTED<br>11 Feb 78                     | COMPLETED<br>11 Feb 78 |
| 7. THICKNESS OF OVERBURDEN<br>55.0'                                                                                          |       |        |                                                                                         |                    | 17. ELEVATION TOP OF HOLE<br>0.0 MLW              |                                                                                             |                                          |                        |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |        |                                                                                         |                    | 18. TOTAL CORE RECOVERY FOR BORING<br>3           |                                                                                             |                                          |                        |
| 9. TOTAL DEPTH OF HOLE<br>55.0' MLW                                                                                          |       |        |                                                                                         |                    | 19. SIGNATURE OF INSPECTOR<br>CHARLES D. CRIFFIN  |                                                                                             |                                          |                        |
| ELEVATION                                                                                                                    | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                            | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.                           | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)           |                                          |                        |
| 0.0 MLW                                                                                                                      | 0'    | c      | d                                                                                       | e                  | f                                                 | g                                                                                           |                                          |                        |
|                                                                                                                              | 5'    |        |                                                                                         |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              | 10'   |        | Water                                                                                   |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              | 15'   |        |                                                                                         |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              | 20'   |        |                                                                                         |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              | 25'   |        |                                                                                         |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              | 30'   |        |                                                                                         |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              |       |        | Continued on sheet 2                                                                    |                    |                                                   |                                                                                             |                                          |                        |
|                                                                                                                              |       |        | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                    |                                                   | BLOWS PER FOOT:<br>Number required to drive 3/8" ID splitspoon w/ 140 lb hammer falling 30" |                                          |                        |

| PROJECT         |            | INSTALLATION       |                                                                    | Hole No.                       |                              |                                                                                           |
|-----------------|------------|--------------------|--------------------------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| Savannah Harbor |            | Savannah River, GA |                                                                    | SH-64                          |                              |                                                                                           |
|                 |            |                    |                                                                    | SHEET 2 OF 2 SHEETS            |                              |                                                                                           |
| ELEVATION<br>a  | DEPTH<br>b | LEGEND<br>c        | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                  | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water lost, depth of<br>weathering, etc., if significant)<br>g |
| -31.0           | 30'        |                    | Bottom of River -30.0' MLW                                         |                                | JAR                          | Blows                                                                                     |
|                 |            |                    | OH - Black soft silt                                               |                                | 1                            | 0                                                                                         |
|                 |            |                    |                                                                    |                                |                              | 0                                                                                         |
|                 | 35'        |                    | SM - Gray fine and medium<br>silty sand with shell<br>fragments    |                                | 2                            | 12                                                                                        |
|                 |            |                    |                                                                    |                                |                              | 8                                                                                         |
|                 |            |                    |                                                                    |                                |                              | 9                                                                                         |
|                 | 40'        |                    |                                                                    |                                |                              | 10                                                                                        |
|                 |            |                    |                                                                    |                                |                              | 14                                                                                        |
|                 |            |                    |                                                                    |                                |                              | 12                                                                                        |
|                 | 45'        |                    |                                                                    |                                |                              | 10                                                                                        |
|                 |            |                    |                                                                    |                                |                              | 16                                                                                        |
| -46.0           |            |                    | Gray medium silty sand with<br>a fat clay layer and some<br>gravel |                                | 3                            | 14                                                                                        |
| -49.5           | 50'        |                    | Green fine silty sand                                              |                                |                              | 21                                                                                        |
|                 |            |                    |                                                                    |                                | 4                            | 26                                                                                        |
|                 |            |                    |                                                                    |                                |                              | 38                                                                                        |
|                 |            |                    |                                                                    |                                |                              | 58                                                                                        |
| -55.0           | 55'        |                    | Bottom of hole -55.0' MLW                                          |                                |                              | 55                                                                                        |

Hole No. SH-325

| DRILLING LOG                                                                                                                 |            | DIVISION SOUTH ATLANTIC |                                                                                   | INSTALLATION SAVANNAH, GA.                                                                       |                              | SHEET 1 OF 1 SHEETS                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                         |                                                                                   | 10. SIZE AND TYPE OF BIT 1 3/4" splitspoon, 5/8" fishtail                                        |                              |                                                                                                     |  |
| 2. LOCATION (Coordinates or Station)<br>X-897251 Y-742614 GA. EAST                                                           |            |                         |                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                              |                                                                                                     |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                         |                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                           |                              |                                                                                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-325                                                            |            |                         |                                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                       |                              | 13. DISTURBED : 7<br>UNDISTURBED : 0                                                                |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                         |                                                                                   | 14. TOTAL NUMBER CORE BOXES 0                                                                    |                              |                                                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                         |                                                                                   | 15. ELEVATION GROUND WATER N/A                                                                   |                              |                                                                                                     |  |
| 7. THICKNESS OF OVERBURDEN 60.9' (Water 40.8')                                                                               |            |                         |                                                                                   | 16. DATE HOLE                                                                                    |                              | 16. STARTED : 22 FEB 92<br>COMPLETED : 22 FEB 92                                                    |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                         |                                                                                   | 17. ELEVATION TOP OF HOLE 0.0'                                                                   |                              |                                                                                                     |  |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                                                 |            |                         |                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                           |                              |                                                                                                     |  |
|                                                                                                                              |            |                         |                                                                                   | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                              |                                                                                                     |  |
| ELEVATION<br>0+0                                                                                                             | DEPTH<br>0 | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                 | % CORE<br>RECOV-<br>ERY<br>JAR                                                                   | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. (if significant))<br>g<br>BLOWS |  |
|                                                                                                                              |            |                         | Water                                                                             |                                                                                                  |                              | Scale change at 40.0'.                                                                              |  |
|                                                                                                                              |            |                         | Bottom of Harbor 40.8'                                                            |                                                                                                  |                              | Set 6" diameter casing by own weight to 44.1.                                                       |  |
| -40.8'                                                                                                                       | 40         |                         | (SC) Dark grey, fine to medium clayey SAND. Some silt & small shell fragments.    |                                                                                                  | 1                            | 0                                                                                                   |  |
| -42.9'                                                                                                                       |            |                         | (CH) Grey, fat CLAY.                                                              |                                                                                                  | 2                            | Weight of rods drove splitspoon from 40.8' to 42.9'.                                                |  |
| -43.6'                                                                                                                       |            |                         | (SC) Dark grey, fine, clayey SAND. Trace of small shell fragments.                |                                                                                                  | 3                            | 14                                                                                                  |  |
| -44.4'                                                                                                                       | 45         |                         | Medium to coarse sand, some small to large shell fragments, trace of fine gravel. |                                                                                                  |                              | Began using Zeagel drilling mud at 47.4'.                                                           |  |
| -45.9'                                                                                                                       |            |                         | (SP) Light grey, coarse, poorly graded SAND. Trace of fine gravel.                |                                                                                                  | 4                            | 15                                                                                                  |  |
|                                                                                                                              |            |                         |                                                                                   |                                                                                                  |                              | 20                                                                                                  |  |
|                                                                                                                              | 50         |                         |                                                                                   |                                                                                                  |                              | 17                                                                                                  |  |
| -51.9'                                                                                                                       |            |                         | Medium to coarse sand, trace of silt.                                             |                                                                                                  | 5                            | 14                                                                                                  |  |
|                                                                                                                              |            |                         |                                                                                   |                                                                                                  |                              | 18                                                                                                  |  |
| -54.9'                                                                                                                       | 55         |                         | (SC) Olive-grey, fine clayey SAND. Trace of silt.                                 |                                                                                                  | 6                            | 30                                                                                                  |  |
|                                                                                                                              |            |                         |                                                                                   |                                                                                                  |                              | 21                                                                                                  |  |
| -57.9'                                                                                                                       |            |                         | Dark olive-grey, trace of fine gravel & shell fragments.                          |                                                                                                  |                              | 14                                                                                                  |  |
|                                                                                                                              | 60         |                         |                                                                                   |                                                                                                  | 7                            | 8                                                                                                   |  |
| -60.9'                                                                                                                       |            |                         |                                                                                   |                                                                                                  |                              | 18                                                                                                  |  |
|                                                                                                                              |            |                         | Bottom of Boring 60.9'                                                            |                                                                                                  |                              | 19                                                                                                  |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |            |                         |                                                                                   | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30". |                              |                                                                                                     |  |

| DRILLING LOG                                                                                                                 |                | DIRECTION<br><b>SOUTH ATLANTIC</b> |                                                                                              | INSTALLATION<br><b>SAVANNAH, GA.</b>                                          |                                  | SHEET <b>1</b><br>OF 2 SHEETS                                                    |                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><b>SAVANNAH HARBOR DEEPENING</b>                                                                               |                |                                    |                                                                                              | 10. SIZE AND TYPE OF BIT $\frac{1\frac{1}{8}}{8}$ " splitspoon, 5/8" fishtail |                                  |                                                                                  |                                                                                                                     |
| 2. LOCATION (Coordinates or Station)<br><b>X-898289 Y-742667      GA. EAST</b>                                               |                |                                    |                                                                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><b>MLW</b>                      |                                  |                                                                                  |                                                                                                                     |
| 3. DRILLING AGENCY<br><b>SAVANNAH DISTRICT</b>                                                                               |                |                                    |                                                                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><b>Failing 314</b>                 |                                  |                                                                                  |                                                                                                                     |
| 4. HOLE NO. (As shown on drawing title and file number) <b>SH-326</b>                                                        |                |                                    |                                                                                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                    |                                  | DISTURBED                                                                        | UNDISTURBED                                                                                                         |
|                                                                                                                              |                |                                    |                                                                                              |                                                                               |                                  | <b>9</b>                                                                         | <b>0</b>                                                                                                            |
| 5. NAME OF DRILLER<br><b>DAVID JUSTISS</b>                                                                                   |                |                                    |                                                                                              | 14. TOTAL NUMBER CORE BOXES                                                   |                                  | <b>N/A</b>                                                                       |                                                                                                                     |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                |                                    |                                                                                              | 15. ELEVATION GROUND WATER                                                    |                                  | <b>N/A</b>                                                                       |                                                                                                                     |
| 7. THICKNESS OF OVERBURDEN <b>60.5' (Water 14.6')</b>                                                                        |                |                                    |                                                                                              | 16. DATE HOLE                                                                 |                                  | STARTED                                                                          | COMPLETED                                                                                                           |
|                                                                                                                              |                |                                    |                                                                                              |                                                                               |                                  | <b>16 NOV 91</b>                                                                 | <b>16 NOV 91</b>                                                                                                    |
| 8. DEPTH DRILLED INTO ROCK <b>0.0'</b>                                                                                       |                |                                    |                                                                                              | 17. ELEVATION TOP OF HOLE                                                     |                                  | <b>0.0'</b>                                                                      |                                                                                                                     |
| 9. TOTAL DEPTH OF HOLE <b>60.5'</b>                                                                                          |                |                                    |                                                                                              | 18. TOTAL CORE RECOVERY FOR BORING                                            |                                  | <b>N/A</b>                                                                       |                                                                                                                     |
|                                                                                                                              |                |                                    |                                                                                              | 19. SIGNATURE OF INSPECTOR<br><b>JAMES ARTHUR, P.G.</b>                       |                                  |                                                                                  |                                                                                                                     |
| ELEVATION<br>0 = 0                                                                                                           | DEPTH<br>0 = 0 | LEGEND<br>c                        | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                            | % CORE<br>RECOVER-<br>ERY<br>e                                                | BOX OR<br>SAMPLE<br>NO.<br>(JAR) | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. If significant) |                                                                                                                     |
| -14.6'                                                                                                                       | 5              |                                    | Water                                                                                        |                                                                               |                                  |                                                                                  |                                                                                                                     |
|                                                                                                                              | 10             |                                    |                                                                                              |                                                                               |                                  |                                                                                  |                                                                                                                     |
|                                                                                                                              | 15             |                                    | Bottom of Harbor 14.6'                                                                       |                                                                               |                                  |                                                                                  |                                                                                                                     |
| -14.6'                                                                                                                       | 15             |                                    | (SM) Grey, fine to coarse grained SAND, 20% silt & 2-5% shell fragments, saturated, no odor. |                                                                               | 1                                | Weight of hammer drive rods & splitspoon from 14.6' to 30.5'                     |                                                                                                                     |
|                                                                                                                              | 20             |                                    |                                                                                              |                                                                               |                                  |                                                                                  |                                                                                                                     |
|                                                                                                                              | 25             |                                    |                                                                                              |                                                                               |                                  |                                                                                  |                                                                                                                     |
| -30.0'                                                                                                                       | 30             |                                    |                                                                                              |                                                                               |                                  |                                                                                  |                                                                                                                     |
|                                                                                                                              |                |                                    | Continued on sheet 2                                                                         |                                                                               |                                  |                                                                                  | BLOWS PER FOOT:<br><br>Number required to drive $\frac{1\frac{1}{8}}$ " I.D. splitspoon w/140 lb hammer falling 30" |



| DRILLING LOG (Cont)                  |       | ELEVATION TOP OF HOLE<br>0.0' MLW |                                                                                                            | Hole No. SH-326    |                                |                                                                                     |       |
|--------------------------------------|-------|-----------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------|-------------------------------------------------------------------------------------|-------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |       |                                   | INSTALLATION<br>Savannah, Ga.                                                                              |                    | SHEET 2<br>OF 2 SHEETS         |                                                                                     |       |
| ELEVATION                            | DEPTH | LEGEND                            | CLASSIFICATION OF MATERIALS<br>(Description)                                                               | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant) | BLOWS |
| -30.0'                               | 30    |                                   | (SM) Cont'd                                                                                                |                    |                                |                                                                                     | 0     |
| -30.5'                               |       |                                   | Some clay.                                                                                                 |                    | 2                              | Began drilling with Zeogel<br>drilling mud at 36.5'.                                | 2     |
|                                      |       |                                   |                                                                                                            |                    |                                |                                                                                     | 16    |
|                                      | 35    |                                   |                                                                                                            |                    |                                |                                                                                     | 19    |
| -36.5'                               |       |                                   | 10% silt w/some gravel. Sulfur odor.                                                                       |                    | 3                              |                                                                                     | 26    |
|                                      |       |                                   |                                                                                                            |                    |                                |                                                                                     | 26    |
|                                      | 40    |                                   |                                                                                                            |                    |                                |                                                                                     | 31    |
| -41.0'                               |       |                                   | 10% shells in lenses.                                                                                      |                    |                                |                                                                                     | 39    |
|                                      |       |                                   |                                                                                                            |                    | 4                              |                                                                                     | 38    |
|                                      | 45    |                                   |                                                                                                            |                    |                                |                                                                                     | 29    |
| -45.5'                               |       |                                   | (SP) Greyish-white, fine to large grained SAND.<br>20% shell fragments. Strong sulfur odor in lenses.      |                    | 5                              |                                                                                     | 37    |
|                                      |       |                                   |                                                                                                            |                    |                                |                                                                                     | 38    |
| -48.5'                               |       |                                   | (SW) Greyish-white, fine to large grained, well<br>graded SAND. 20% gravel & shell fragments<br>in lenses. |                    | 6                              |                                                                                     | 33    |
|                                      | 50    |                                   |                                                                                                            |                    |                                |                                                                                     | 50    |
|                                      |       |                                   |                                                                                                            |                    |                                |                                                                                     | 46    |
| -53.0'                               |       |                                   | (MH) Green, stiff, fat silt, moist, organic odor.                                                          |                    | 7                              |                                                                                     | 41    |
|                                      | 55    |                                   |                                                                                                            |                    |                                |                                                                                     | 16    |
| -56.0'                               |       |                                   | (SP) Grey, large to medium grained SAND.<br>1-2% shell fragments & trace of silt.                          |                    | 8                              |                                                                                     | 24    |
|                                      |       |                                   |                                                                                                            |                    |                                |                                                                                     | 24    |
| -59.0'                               |       |                                   | (MH) Green, stiff, fat SILT. Moist, organic<br>odor.                                                       |                    | 9                              |                                                                                     | 19    |
| -60.5'                               | 60    |                                   |                                                                                                            |                    |                                |                                                                                     | 23    |
|                                      |       |                                   | Bottom of Boring 60.5'                                                                                     |                    |                                |                                                                                     |       |

Hole No. SH-327

| DRILLING LOG                                                                                                              |  | SIGN<br>SOUTH ATLANTIC |  | INSTALLATION<br>SAVANNAH, GA.                                                   |  | SHEET 1<br>OF 2 SHEETS                                          |  |
|---------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|---------------------------------------------------------------------------------|--|-----------------------------------------------------------------|--|
| PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |  |                        |  | 10. SIZE AND TYPE OF BIT 1 3/4" split spoon, 5/16" shaft, 4 x 5/16" carbide bit |  |                                                                 |  |
| LOCATION (Coordinates or Station)<br>-898794 Y=742710 GA. EAST                                                            |  |                        |  | 11. DATUM FOR ELEVATION SHOWN (BM or MSL)<br>MLW                                |  |                                                                 |  |
| DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |  |                        |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                          |  |                                                                 |  |
| HOLE NO. (As shown on drawing title and file number)<br>SH-327                                                            |  |                        |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>5                                 |  | DISTURBED<br>0                                                  |  |
| NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |  |                        |  | 14. TOTAL NUMBER CORE BOXES<br>1                                                |  | UNDISTURBED<br>0                                                |  |
| DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                        |  | 15. ELEVATION GROUND WATER<br>N/A                                               |  | 16. DATE HOLE<br>STARTED<br>31 AUG 92<br>COMPLETED<br>31 AUG 92 |  |
| THICKNESS OF OVERBURDEN 76.5'                                                                                             |  |                        |  | 17. ELEVATION TOP OF HOLE 0.0'                                                  |  | 18. TOTAL CORE RECOVERY FOR BORING                              |  |
| DEPTH DRILLED INTO ROCK 0.0'                                                                                              |  |                        |  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                |  |                                                                 |  |
| TOTAL DEPTH OF HOLE 76.5'                                                                                                 |  |                        |  |                                                                                 |  |                                                                 |  |

| ELEVATION<br>0=0                                                                                       | DEPTH<br>0= | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                | % CORE<br>RECOVERY<br>e                                                                              | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling flow, water loss, change of<br>weathering, etc., if significant)<br>g                                        | BLOWS |
|--------------------------------------------------------------------------------------------------------|-------------|-------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------|
|                                                                                                        |             |             | Water                                                                            |                                                                                                      |                              | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 45.7'.                                                       |       |
|                                                                                                        | 40          |             | Bottom of Harbor 41.5'                                                           |                                                                                                      |                              |                                                                                                                                   |       |
| -41.5'                                                                                                 |             | ***         | (SP) Gray coarse poorly graded SAND,<br>trace of silt and small shell fragments. |                                                                                                      | 1                            | Weight of rods drove split spoon<br>from 41.5' to 43.2', no recovery.<br>Redrove 41.5' to 43.2' then continued<br>drive to 44.7'. | 0     |
| -44.7'                                                                                                 | 45          |             |                                                                                  |                                                                                                      |                              | Grouted hole from 60.9' to 76.5'.                                                                                                 | 25    |
|                                                                                                        |             |             | Wash.                                                                            |                                                                                                      |                              |                                                                                                                                   |       |
| -49.7'                                                                                                 | 50          |             | (CH) Gray fat CLAY, some fine sand and silt,<br>trace of small shells.           |                                                                                                      | 2                            |                                                                                                                                   | 27    |
| -51.2'                                                                                                 |             |             | Wash.                                                                            |                                                                                                      |                              |                                                                                                                                   |       |
|                                                                                                        | 55          |             | (SC) Gray fine clayey SAND.                                                      |                                                                                                      | 3                            |                                                                                                                                   | 32    |
| -56.2'                                                                                                 |             |             | Wash.                                                                            |                                                                                                      |                              |                                                                                                                                   |       |
| -57.7'                                                                                                 | 60          |             |                                                                                  |                                                                                                      |                              |                                                                                                                                   |       |
|                                                                                                        |             |             | Wash.                                                                            |                                                                                                      |                              |                                                                                                                                   |       |
| -62.7'                                                                                                 | 65          |             | (CH) Gray fat CLAY, some fine sand and silt.                                     |                                                                                                      | 4                            |                                                                                                                                   | 27    |
| -64.2'                                                                                                 |             |             | Wash.                                                                            |                                                                                                      |                              |                                                                                                                                   |       |
| -65.0'                                                                                                 |             |             |                                                                                  |                                                                                                      |                              |                                                                                                                                   |       |
| Continued on sheet 2                                                                                   |             |             |                                                                                  |                                                                                                      |                              |                                                                                                                                   |       |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System. |             |             |                                                                                  | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D.<br>split spoon w/140 lb. hammer falling 30". |                              |                                                                                                                                   |       |

| DRILLING LOG (Con. sheet)            |       | ELEVATION TOP OF HOLE<br>0.0' MLW |                                                                | Hole No. SH-327    |                                |                                                                                      |
|--------------------------------------|-------|-----------------------------------|----------------------------------------------------------------|--------------------|--------------------------------|--------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |       |                                   | INSTALLATION<br>Savannah, Ga.                                  |                    | SHEET 2<br>OF 2 SHEETS         |                                                                                      |
| ELEVATION                            | DEPTH | LEGEND                            | CLASSIFICATION OF MATERIALS<br>(Description)                   | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant) |
| -65.0'                               | 65    |                                   | Wash.                                                          |                    |                                | Scale change at 70.0'.                                                               |
| -69.2'                               | 70    |                                   | (SM) Dark olive gray and black fine to medium silty SAND.      |                    | 5                              |                                                                                      |
| -70.9'                               | 72    |                                   | (SC) Light olive gray fine clayey SAND, some silt, calcareous. |                    | 6                              |                                                                                      |
| -72.4'                               |       |                                   | Very stiff.                                                    |                    |                                |                                                                                      |
| -72.7'                               |       |                                   | Hard.                                                          |                    |                                |                                                                                      |
| -73.1'                               |       |                                   | Core loss.                                                     |                    |                                |                                                                                      |
|                                      | 74    |                                   |                                                                | 17%                | Box 1                          | Pull-1<br>From 72.4', run 4.1' to 76.5' rec 0.7'<br>C. L. 3.4'                       |
|                                      | 76    |                                   |                                                                |                    |                                | Waxed sample.                                                                        |
| -76.5'                               |       |                                   | Bottom of Boring 76.5'                                         |                    |                                |                                                                                      |
|                                      | 78    |                                   |                                                                |                    |                                |                                                                                      |

Hole No. SH-327A

| DRILLING LOG                                                                                                                 |       | SOW SOUTH ATLANTIC |                                                                                                                                                              | INSTALLATION SAVANNAH, GA.                                                     |                   | SHEET 1 OF 1 SHEETS                                                                                                                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                    |                                                                                                                                                              | 10. SIZE AND TYPE OF BIT<br>5/8" fishtail, 4 x 5/8" carbide bit                |                   |                                                                                                                                                                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-898792 Y-742712 GA. EAST                                                           |       |                    |                                                                                                                                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                   |                                                                                                                                                                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                    |                                                                                                                                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                         |                   |                                                                                                                                                                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-327A                                                           |       |                    |                                                                                                                                                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 0<br>UNDISTURBED : 1 |                   |                                                                                                                                                                                                                                           |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                    |                                                                                                                                                              | 14. TOTAL NUMBER CORE BOXES<br>1                                               |                   |                                                                                                                                                                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                    |                                                                                                                                                              | 15. ELEVATION GROUND WATER<br>N/A                                              |                   |                                                                                                                                                                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 75.3' (Water 41.0')                                                                               |       |                    |                                                                                                                                                              | 16. DATE HOLE<br>STARTED : 1 SEP 92<br>COMPLETED : 1 SEP 92                    |                   |                                                                                                                                                                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                    |                                                                                                                                                              | 17. ELEVATION TOP OF HOLE 0.0'                                                 |                   |                                                                                                                                                                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE 75.3'                                                                                                 |       |                    |                                                                                                                                                              | 18. TOTAL CORE RECOVERY FOR BORING 100 %                                       |                   |                                                                                                                                                                                                                                           |  |
|                                                                                                                              |       |                    |                                                                                                                                                              | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                   |                                                                                                                                                                                                                                           |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND             | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                 | % CORE RECOVERY                                                                | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                                                         |  |
| 0+0                                                                                                                          | 0+    | c                  |                                                                                                                                                              |                                                                                |                   |                                                                                                                                                                                                                                           |  |
|                                                                                                                              |       |                    | Water                                                                                                                                                        |                                                                                |                   | Scale change at 35.0'.<br>Set 6" diameter casing by own weight to 44.5'.                                                                                                                                                                  |  |
| -41.0'                                                                                                                       | 40    |                    | Bottom of Harbor 41.0'                                                                                                                                       |                                                                                |                   |                                                                                                                                                                                                                                           |  |
|                                                                                                                              |       |                    | Wash.                                                                                                                                                        |                                                                                |                   | Cleaned out from 41.0' to 50.5' with 5/8" fishtail. Pushed 3" Shelby tube from 50.5' to 52.5'. Jar sample taken from bottom of tube from 52.3' to 52.5'.                                                                                  |  |
| -50.5'                                                                                                                       | 50    |                    | (CH) Gray fat CLAY, trace of fine sand, hard.                                                                                                                |                                                                                | UD-1              |                                                                                                                                                                                                                                           |  |
| -52.5'                                                                                                                       |       |                    | Wash.                                                                                                                                                        |                                                                                |                   | Cleaned out to 60.1'. Pushed 3" diameter Shelby tube from 60.1' to 62.1', but tube remained in hole. Retrieved Shelby tube with core barrel but tube was damaged by bit. Discarded tube. Cleaned out to 70.1', cored from 70.1' to 75.3'. |  |
|                                                                                                                              | 60    |                    |                                                                                                                                                              |                                                                                |                   |                                                                                                                                                                                                                                           |  |
|                                                                                                                              | 70    |                    | (SC) Dark olive gray and black fine to medium clayey SAND, soft to medium stiff, loose to medium dense, body broken.                                         |                                                                                |                   |                                                                                                                                                                                                                                           |  |
| -70.1'                                                                                                                       |       |                    | Olive gray, fine sand, slightly calcareous, very stiff to hard, dense, highly jointed with horizontal breaks at 71.8', 72.7', 73.4', 74.4', 74.8' and 75.0'. | 100%                                                                           | Box 1             | From 70.1', run 5.2' to 75.3' rec 5.2'.<br>Waxed samples at 73.4' to 74.4'.<br>Grouted hole from 62.3' to 75.3'.                                                                                                                          |  |
| -71.7'                                                                                                                       |       |                    |                                                                                                                                                              |                                                                                |                   |                                                                                                                                                                                                                                           |  |
| -75.3'                                                                                                                       |       |                    | Bottom of boring 75.3'                                                                                                                                       |                                                                                |                   |                                                                                                                                                                                                                                           |  |
|                                                                                                                              | 80    |                    |                                                                                                                                                              |                                                                                |                   |                                                                                                                                                                                                                                           |  |
|                                                                                                                              | 90    |                    | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                                                             |                                                                                |                   |                                                                                                                                                                                                                                           |  |

| DRILLING LOG                                                                                                                 |  | D <sup>N</sup> SOUTH ATLANTIC                                 |  | Hole No. SH-328                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------|--|------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |  | INSTALLATION<br>SAVANNAH, GA.                                 |  | SHEET 1<br>OF 1 SHEETS                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>X=900321 Y=742411 GA. EAST                                                           |  | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/16" FISHTAIL |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                            |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314        |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED: 5<br>UNDISTURBED: 0 |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-328                                                            |  | 14. TOTAL NUMBER CORE BOXES<br>0                              |  | 15. ELEVATION GROUND WATER<br>N/A                                            |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |  | 16. DATE HOLE<br>STARTED: 27 FEB 92<br>COMPLETED: 27 FEB 92   |  | 17. ELEVATION TOP OF HOLE<br>0.0'                                            |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                     |  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                             |  |
| 7. THICKNESS OF OVERBURDEN<br>60.4' (Water 37.9')                                                                            |  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                     |  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                             |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.              |  |                                                                              |  |
| 9. TOTAL DEPTH OF HOLE<br>60.4'                                                                                              |  |                                                               |  |                                                                              |  |

| ELEVATION<br>0.0 | DEPTH<br>0 | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                              | 2. CORE RECOVERY<br>e | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g           | BLOWS |
|------------------|------------|-------------|----------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|--------------------------------------------------------------------------------------------------|-------|
|                  | 35         |             | Water                                                                                                          |                       |                        | Scale change at 35.0'.<br>Set 6" diameter casing by own weight to 38.1'.                         |       |
|                  |            |             | Bottom of Harbor 37.9'                                                                                         |                       |                        |                                                                                                  |       |
|                  | 40         |             | (SM) Olive, fine, silty SAND.                                                                                  |                       | 1                      | Weight of rods pushed 5 splitspoon from 37.9' to 38.5'.                                          | 6     |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  | 8     |
|                  | 45         |             |                                                                                                                |                       | 2                      |                                                                                                  | 12    |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  | 13    |
|                  | 50         |             |                                                                                                                |                       |                        |                                                                                                  | 15    |
|                  |            |             | Olive-grey.                                                                                                    |                       |                        |                                                                                                  | 16    |
|                  | 55         |             |                                                                                                                |                       | 3                      |                                                                                                  | 20    |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  | 24    |
|                  | 60         |             | (SC) Very dark greyish-brown, fine to medium clayey SAND. Occasional layer of grey, fat clay up to 0.3' thick. |                       | 4                      |                                                                                                  | 15    |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  | 24    |
|                  |            |             | No clay layers.                                                                                                |                       |                        |                                                                                                  | 17    |
|                  |            |             |                                                                                                                |                       | 5                      |                                                                                                  | 32    |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  | 25    |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  | 35    |
|                  |            |             | Bottom of Boring 60.4'                                                                                         |                       |                        |                                                                                                  | 31    |
|                  |            |             |                                                                                                                |                       |                        |                                                                                                  |       |
|                  |            |             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.               |                       |                        |                                                                                                  |       |
|                  |            |             |                                                                                                                |                       |                        | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |       |

Hole No. SH-329

| DRILLING LOG                                                                                                              |       | OF <sup>TM</sup> SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                |                   | SHEET 1 OF 1 SHEETS                                                                                         |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                                 |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/8" FISHTAIL |                   |                                                                                                             |  |
| 2. LOCATION (Coordinates or Station) X=901782 Y=742835 GA. EAST                                                           |       |                                 |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW            |                   |                                                                                                             |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                                 |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL Folling 314       |                   |                                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-329                                                            |       |                                 |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                   | DISTURBED 4 UNDISTURBED 0                                                                                   |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                                 |                                                                                                  | 14. TOTAL NUMBER CORE BOXES                               |                   | 0                                                                                                           |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                                 |                                                                                                  | 15. ELEVATION GROUND WATER N/A                            |                   |                                                                                                             |  |
| 7. THICKNESS OF OVERBURDEN 60.7' (Water 50.2')                                                                            |       |                                 |                                                                                                  | 16. DATE HOLE                                             |                   | STARTED 12 DEC 91 COMPLETED 12 DEC 91                                                                       |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                                 |                                                                                                  | 17. ELEVATION TOP OF HOLE                                 |                   | 0.0'                                                                                                        |  |
| 9. TOTAL DEPTH OF HOLE 60.7'                                                                                              |       |                                 |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING                        |                   | N/A                                                                                                         |  |
|                                                                                                                           |       |                                 |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.             |                   |                                                                                                             |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND                          | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                           | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                              |  |
| 0+0                                                                                                                       | 0     |                                 |                                                                                                  |                                                           | JAR               | BLOWS                                                                                                       |  |
|                                                                                                                           |       |                                 | Water                                                                                            |                                                           |                   | Scale change at 50.0'. Set 6" diameter casing by own weight to 52.0'.                                       |  |
|                                                                                                                           |       |                                 | Bottom of Harbor 50.2'                                                                           |                                                           |                   |                                                                                                             |  |
| -50.2'                                                                                                                    | 50    |                                 | (SC) Dark grey to black, fine to medium clayey SAND. Trace of shell fragments.                   |                                                           | 1                 | Weight of rods drove split spoon to 51.7'.<br>Began using Zeagel drilling mud at 54.7'.                     |  |
| -51.7'                                                                                                                    |       |                                 | Medium to coarse, some shell fragments & silt.                                                   |                                                           |                   |                                                                                                             |  |
| -53.2'                                                                                                                    |       |                                 | (SP) Light tanish-grey, medium to coarse poorly graded SAND.                                     |                                                           | 2                 | No recovery from 56.2' to 57.7'.<br>Redrove to 57.7' then can't drive to 59.2'. Jar #3 from 56.2' to 59.2'. |  |
| -54.7'                                                                                                                    |       |                                 | Fine to medium sand.                                                                             |                                                           |                   |                                                                                                             |  |
| -56.2'                                                                                                                    | 55    |                                 | (SC) Grey, fine to medium clayey SAND. Occasional clay layer up to 0.2' thick.                   |                                                           | 3                 |                                                                                                             |  |
| -59.2'                                                                                                                    |       |                                 | Fine sand.                                                                                       |                                                           | 4                 |                                                                                                             |  |
| -60.7'                                                                                                                    | 60    |                                 |                                                                                                  |                                                           |                   |                                                                                                             |  |
|                                                                                                                           |       |                                 | Bottom of Boring 60.7'                                                                           |                                                           |                   | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. split spoon w/140 lb. hammer falling 30".           |  |
|                                                                                                                           |       |                                 | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                           |                   |                                                                                                             |  |

Hole No. SH-332

| DRILLING LOG                                                                                                                 |            | 0° 10' N<br>SOUTH ATLANTIC |                                                                                                     | INSTALLATION<br>SAVANNAH, GA.                             |                                | SHEET 1<br>OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                            |                                                                                                     | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5/2" FISHTAIL |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-905234 Y-743478 GA. EAST                                                           |            |                            |                                                                                                     | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW         |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314    |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-332                                                            |            |                            |                                                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                |                                | DISTURBED<br>5<br>UNDISTURBED<br>0                                                        |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                            |                                                                                                     | 14. TOTAL NUMBER CORE BOXES                               |                                | 0                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                     | 15. ELEVATION GROUND WATER                                |                                | N/A                                                                                       |  |
| 7. THICKNESS OF OVERBURDEN 60.3' (Water 39.3')                                                                               |            |                            |                                                                                                     | 16. DATE HOLE                                             |                                | STARTED<br>12 MAR 92<br>COMPLETED<br>12 MAR 92                                            |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                     | 17. ELEVATION TOP OF HOLE                                 |                                | 0.0'                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 60.3'                                                                                                 |            |                            |                                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING                        |                                | N/A                                                                                       |  |
|                                                                                                                              |            |                            |                                                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.          |                                |                                                                                           |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                   | % CORE<br>RECOVERY<br>e                                   | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              | 35         |                            | Water                                                                                               |                                                           |                                | Scale change of 35.0'. Set 6" diameter casing by own weight to 42.6'.                     |  |
| -39.3'                                                                                                                       | 40         |                            | Bottom of Harbor 39.3'                                                                              |                                                           |                                |                                                                                           |  |
| -42.3'                                                                                                                       |            |                            | (SM) Very dark gray to black, fine to medium silty SAND. Some clay, trace of small shell fragments. |                                                           | 1                              | Weight of rods drove split spoon from 39.3' to 42.3'. 0                                   |  |
|                                                                                                                              |            |                            | Olive, fine, silty sand, trace of clay, no shell fragments.                                         |                                                           | 2                              | 10                                                                                        |  |
|                                                                                                                              | 45         |                            |                                                                                                     |                                                           |                                | 13                                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                     |                                                           | 3                              | 16                                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                     |                                                           |                                | 12                                                                                        |  |
| -49.8'                                                                                                                       | 50         |                            | trace of small shell fragments.                                                                     |                                                           |                                | 17                                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                     |                                                           |                                | 13                                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                     |                                                           | 4                              | 10                                                                                        |  |
|                                                                                                                              | 55         |                            |                                                                                                     |                                                           |                                | 14                                                                                        |  |
| -57.3'                                                                                                                       |            |                            | Dark olive-gray, fine, silty SAND. Trace of clay, no shell fragments.                               |                                                           |                                | 16                                                                                        |  |
|                                                                                                                              |            |                            |                                                                                                     |                                                           |                                | 24                                                                                        |  |
| -60.3'                                                                                                                       | 60         |                            |                                                                                                     |                                                           | 5                              | 25                                                                                        |  |
|                                                                                                                              |            |                            | Bottom of Boring 60.3'                                                                              |                                                           |                                | BLOWS PER FOOT:                                                                           |  |
|                                                                                                                              |            |                            | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.    |                                                           |                                | Number required to drive 1 1/2" I.D. split spoon w/ 140 lb. hammer falling 30".           |  |

Hole No. SH-334

| DRILLING LOG                                                                                                                 |             | 0° 30' N<br>SOUTH ATLANTIC                                                          |                                                             | INSTALLATION<br>SAVANNAH, GA.                                                                    |                                | SHEET 1<br>OF 1 SHEETS                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                                                                                     |                                                             | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 3 1/2" FISHTAIL                                   |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X=907169 Y=743228 GA. EAST                                                           |             |                                                                                     |                                                             | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                                                                                     |                                                             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Folling 314                                           |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-334                                                            |             |                                                                                     |                                                             | BURDEN SAMPLES TAKEN<br>DISTURBED : 5<br>UNDISTURBED : 0                                         |                                |                                                                                           |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                                                                                     |                                                             | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                                |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                                                                                     |                                                             | 15. ELEVATION GROUND WATER<br>N/A                                                                |                                |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN<br>59.7' (Water 40.2')                                                                            |             |                                                                                     |                                                             | 16. DATE HOLE<br>STARTED : 12 DEC 91<br>COMPLETED : 12 DEC 91                                    |                                |                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                                                                                     |                                                             | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                                |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE<br>59.7'                                                                                              |             |                                                                                     |                                                             | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                                | X                                                                                         |  |
|                                                                                                                              |             |                                                                                     |                                                             | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                                |                                                                                           |  |
| ELEVATION<br>0=0                                                                                                             | DEPTH<br>0= | LEGEND<br>e                                                                         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d           | % CORE<br>RECOVER-<br>ERY<br>e                                                                   | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |  |
|                                                                                                                              |             |                                                                                     | Water                                                       |                                                                                                  |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 48.4'.                     |  |
|                                                                                                                              |             |                                                                                     | Bottom of Harbor 40.2'                                      |                                                                                                  |                                |                                                                                           |  |
| -40.2'                                                                                                                       | 40          |    | (MH) Dark grey to black clayey SILT.<br>Trace of fine sand. |                                                                                                  | 1                              | Weight of rods drove splitspoon to 44.7'.<br>0                                            |  |
| -44.7'                                                                                                                       | 45          |    | (CH) Grey, fat CLAY. Some silt & fine sand.                 |                                                                                                  | 2                              | 3                                                                                         |  |
| -47.7'                                                                                                                       | 50          |    | Trace of silt & fine sand.                                  |                                                                                                  | 3                              | 5                                                                                         |  |
|                                                                                                                              | 55          |   |                                                             |                                                                                                  | 4                              | 4                                                                                         |  |
| -58.2'                                                                                                                       | 60          |  | Layer of olive sandy clay at approx.<br>59.6'-59.7'.        |                                                                                                  | 5                              | 4                                                                                         |  |
| -59.7'                                                                                                                       |             |                                                                                     | Bottom of Boring 59.7'                                      |                                                                                                  |                                | 5                                                                                         |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |             |                                                                                     |                                                             | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |                                |                                                                                           |  |



Hole No. SH 424

| DRILLING LOG                                                                                                                 |  | DIVISION<br>SOUTH ATLANTIC |  | INSTALLATION<br>SAVANNAH, GA                                      |  | SHEET 1<br>OF 1 SHEETS |  |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|-------------------------------------------------------------------|--|------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR                                                                                                |  |                            |  | 10. SIZE AND TYPE OF BIT<br>5/2" FISHTAIL                         |  |                        |  |
| 2. LOCATION (Coordinates or Station)<br>GA X-1065109.89, Y-744050.79                                                         |  |                            |  | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL)<br>MLW                 |  |                        |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |  |                            |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500           |  |                        |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 424                                                            |  |                            |  | 13. TOTAL NO. OF SOIL SAMPLES TAKEN<br>DISTURBED 10 UNDISTURBED 0 |  |                        |  |
| 5. NAME OF DRILLER<br>H. FULCHER                                                                                             |  |                            |  | 14. TOTAL NUMBER CORE BOXES<br>NONE                               |  |                        |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                            |  | 15. GROUND WATER ELEVATION<br>N/A                                 |  |                        |  |
| 7. THICKNESS OF OVERBURDEN<br>>60.4' MLW                                                                                     |  |                            |  | 16. DATE HOLE<br>STARTED 1 APR 2002 COMPLETED 1 APR 2002          |  |                        |  |
| 8. DEPTH DRILLED INTO ROCK<br>-                                                                                              |  |                            |  | 17. ELEVATION TOP OF HOLE<br>-44.4' (HARBOR FLOOR)                |  |                        |  |
| 9. TOTAL DEPTH OF HOLE<br>60.4' MLW                                                                                          |  |                            |  | 18. TOTAL CORE RECOVERY FOR BORING<br>NONE X                      |  |                        |  |
|                                                                                                                              |  |                            |  | 19. SIGNATURE OF INSPECTOR<br>DANA POLACSEK                       |  |                        |  |

| ELEVATION (FT)<br>0.0' | DEPTH (FT)<br>0 | SYMBOLS<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                                                                                 | PERCENT<br>MOISTURE<br>CONTENT<br>e | JAR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g                       | BLOWS/FT.<br>h |
|------------------------|-----------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------|----------------|
| 40                     |                 |              | Water.                                                                                                                                                                                                            |                                     |                           | Change of scale at 40'.<br>Set 65' of casing to a depth of 47.8'.<br>Elevation of bottom of harbor is 44.4'. |                |
| 45                     |                 |              | BOTTOM OF ENTRANCE CHANNEL                                                                                                                                                                                        |                                     |                           |                                                                                                              |                |
|                        |                 |              | (SM) Dark gray fine to clayey SAND with trace to little silt, shell fragments.                                                                                                                                    |                                     | 1                         |                                                                                                              | 12             |
|                        |                 |              | (ML) Olive gray to green SILT with trace to little fine sand. Becomes green sandy silt with occasional rounded black clayey sand size rock fragments, with trace clay.                                            |                                     | 2                         | Boring reamed to 46.9' accidentally.                                                                         | 16             |
|                        |                 |              | With frequent shell fragments.                                                                                                                                                                                    |                                     | 3                         |                                                                                                              | 29             |
|                        |                 |              | (SM) Green silty fine SAND with frequent black, rounded, oblong rock fragments and quartz/feldspar grains, and frequent shell fragments.                                                                          |                                     | 4                         |                                                                                                              | 26             |
|                        |                 |              |                                                                                                                                                                                                                   |                                     | 5                         |                                                                                                              | 26             |
|                        |                 |              |                                                                                                                                                                                                                   |                                     | 6                         |                                                                                                              | 20             |
|                        |                 |              | (ML) Green SILT with some fine sand, trace clay, with frequent black, rounded, oblong rock fragments, quartz/feldspar and shell fragments.                                                                        |                                     | 7                         |                                                                                                              | 20             |
|                        |                 |              |                                                                                                                                                                                                                   |                                     | 8                         |                                                                                                              | 18             |
|                        |                 |              | (SM) Green silty fine SAND with frequent black, rounded, oblong rock fragments, frequent seams of green clay and some silt. Becomes dark gray, with trace clay, rock fragments decrease with occasional feldspar. |                                     | 9                         |                                                                                                              | 34             |
|                        |                 |              |                                                                                                                                                                                                                   |                                     | 10                        |                                                                                                              | 35             |
| -60.4'                 |                 |              | BOTTOM OF BORING: 60.4'                                                                                                                                                                                           |                                     |                           |                                                                                                              |                |
| 65                     |                 |              |                                                                                                                                                                                                                   |                                     |                           |                                                                                                              |                |
| 70                     |                 |              |                                                                                                                                                                                                                   |                                     |                           |                                                                                                              |                |
| 75                     |                 |              |                                                                                                                                                                                                                   |                                     |                           |                                                                                                              |                |

NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO DRIVE 1 3/8" I. D. SPLITSPOON W/140 LB. HAMMER FALLING 30".

Hole No. SH 423

| DRILLING LOG                                                                                                                 |                     | DIVISION<br>SOUTH ATLANTIC |                                                   | INSTALLATION<br>SAVANNAH, GA                                 |                           | SHEET 1<br>OF 2 SHEETS                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------|---------------------------------------------------|--------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |                     |                            |                                                   | 10. SIZE AND TYPE OF BIT 1 3/8" I. D. SPLITSPOON             |                           |                                                                                                       |  |
| 2. LOCATION (Coordinates or Station)<br>GA X-1059916.7, Y-743356.9                                                           |                     |                            |                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                           |                                                                                                       |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |                     |                            |                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500 CD-3 |                           |                                                                                                       |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 423                                                            |                     |                            |                                                   | 13. TOTAL NO. OF SOIL SAMPLES TAKEN                          |                           | DISTURBED 10<br>UNDISTURBED 0                                                                         |  |
| 5. NAME OF DRILLER<br>HERMAN                                                                                                 |                     |                            |                                                   | 14. TOTAL NUMBER CORE BOXES                                  |                           | NONE                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                     |                            |                                                   | 15. GROUND WATER ELEVATION                                   |                           | N/A                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |                     |                            |                                                   | 16. DATE HOLE                                                |                           | STARTED 29 MAR 2002 COMPLETED 29 MAR 2002                                                             |  |
| 8. DEPTH DRILLED INTO ROCK 0'                                                                                                |                     |                            |                                                   | 17. ELEVATION TOP OF HOLE                                    |                           | 0.0' MLW                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 60.4'                                                                                                 |                     |                            |                                                   | 18. TOTAL CORE RECOVERY FOR BORING                           |                           | NONE %                                                                                                |  |
|                                                                                                                              |                     |                            |                                                   | 19. SIGNATURE OF INSPECTOR<br>GREGORY TAYLOR                 |                           |                                                                                                       |  |
| ELEVATION<br>(FT.)<br>0.0'                                                                                                   | DEPTH<br>(FT.)<br>0 | SYMBOLS<br>c               | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | PERCENT<br>MOISTURE<br>CONTENT<br>e                          | JAR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. If significant)<br>g<br>BLOWS/FT. |  |
|                                                                                                                              | 5                   |                            |                                                   |                                                              |                           | Set 65' of casing to a<br>depth of 50.4'.<br>Elevation of bottom of<br>harbor is 45.4'.               |  |
|                                                                                                                              | 10                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 15                  |                            | Water,                                            |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 20                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 25                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 30                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 35                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 40                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 45                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 50                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 55                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 60                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 65                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 70                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 75                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 80                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 85                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 90                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 95                  |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 100                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 105                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 110                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 115                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 120                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 125                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 130                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 135                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 140                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 145                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 150                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 155                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 160                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 165                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 170                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 175                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 180                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 185                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 190                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 195                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 200                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 205                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 210                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 215                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 220                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 225                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 230                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 235                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 240                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 245                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 250                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 255                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 260                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 265                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 270                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 275                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 280                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 285                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 290                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 295                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 300                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 305                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 310                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 315                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 320                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 325                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 330                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 335                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 340                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 345                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 350                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 355                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 360                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 365                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 370                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 375                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 380                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 385                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 390                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 395                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 400                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 405                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 410                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 415                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 420                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 425                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 430                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 435                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 440                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 445                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 450                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 455                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 460                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 465                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 470                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 475                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 480                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 485                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 490                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 495                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 500                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 505                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 510                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 515                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 520                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 525                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 530                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 535                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 540                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 545                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 550                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 555                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 560                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 565                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 570                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 575                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 580                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 585                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 590                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 595                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 600                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 605                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 610                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 615                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 620                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 625                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 630                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 635                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 640                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 645                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 650                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 655                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 660                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 665                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 670                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 675                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 680                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 685                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 690                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 695                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 700                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 705                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 710                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 715                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 720                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 725                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 730                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 735                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 740                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 745                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 750                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 755                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 760                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 765                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 770                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 775                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 780                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 785                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 790                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 795                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 800                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 805                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 810                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 815                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 820                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 825                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 830                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 835                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 840                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 845                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 850                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 855                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 860                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 865                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 870                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 875                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 880                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 885                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 890                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 895                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 900                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 905                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 910                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 915                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 920                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 925                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 930                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 935                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 940                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 945                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 950                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 955                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 960                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 965                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 970                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 975                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 980                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 985                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 990                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 995                 |                            |                                                   |                                                              |                           |                                                                                                       |  |
|                                                                                                                              | 1000                |                            |                                                   |                                                              |                           |                                                                                                       |  |

CONTINUED ON SHEET •2

NOTE: SOILS VISUALLY  
FIELD CLASSIFIED IN  
ACCORDANCE WITH THE  
UNIFIED SOIL CLASS-  
IFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO  
DRIVE 1 3/8" I. D. SPLITSPOON  
W/140 LB. HAMMER FALLING  
30".

| DRILLING LOG (Cont Sheet)            |                    |              | ELEVATION TOP OF HOLE<br>0.0' MLW                 |                                     | Hole No. SH 423           |                                                                                           |
|--------------------------------------|--------------------|--------------|---------------------------------------------------|-------------------------------------|---------------------------|-------------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |                    |              | INSTALLATION<br>SAVANNAH, GA                      |                                     | SHEET 2<br>OF 2 SHEETS    |                                                                                           |
| ELEVATION<br>(FT)<br>a               | DEPTH<br>(FT)<br>b | SYMBOLS<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | PERCENT<br>MOISTURE<br>CONTENT<br>e | JAR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                      | 30                 |              |                                                   |                                     |                           |                                                                                           |
|                                      | 35                 |              |                                                   |                                     |                           |                                                                                           |
|                                      | 40                 |              | Water,                                            |                                     |                           |                                                                                           |
|                                      | 45                 |              | BOTTOM OF HARBOR                                  |                                     |                           |                                                                                           |
|                                      |                    |              | (MH) Green high plasticity SILT.                  |                                     | 1                         | Weight of rods.                                                                           |
|                                      |                    |              | (SM) Green SILTY SAND (fine).                     |                                     | 2                         |                                                                                           |
|                                      | 50                 |              | (ML) Green low plasticity SANDY SILT.             |                                     | 3                         |                                                                                           |
|                                      |                    |              |                                                   |                                     | 4                         |                                                                                           |
|                                      |                    |              |                                                   |                                     | 5                         |                                                                                           |
|                                      | 55                 |              | Shell fragments.                                  |                                     | 6                         |                                                                                           |
|                                      |                    |              | Wood fragments and fine gravel.                   |                                     | 7                         | Reaction with acid.                                                                       |
|                                      |                    |              |                                                   |                                     | 8                         |                                                                                           |
|                                      |                    |              |                                                   |                                     | 9                         |                                                                                           |
|                                      | 60                 |              | (MH) Gray high plasticity SILT.                   |                                     | 10                        |                                                                                           |
| -60.4'                               |                    |              | BOTTOM OF BORING                                  |                                     |                           |                                                                                           |
|                                      | 65                 |              |                                                   |                                     |                           |                                                                                           |
|                                      | 70                 |              |                                                   |                                     |                           |                                                                                           |
|                                      | 75                 |              |                                                   |                                     |                           |                                                                                           |

NOTE: SOILS VISUALLY  
FIELD CLASSIFIED IN  
ACCORDANCE WITH THE  
UNIFIED SOIL CLASS-  
IFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO  
DRIVE 1 3/8" I. D. SPLITSPOON

# SAVANNAH HARBOR BORING LOGS

From Station -14+000

To

Station -38+500

Hole No. 6

| DRILLING LOG                                                                                                                 |              | DIVISION<br>South Atlantic |                                                                                         | INSTALLATION<br>Tybee Beach                                 |                                     | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |              |                            |                                                                                         | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                     |                                                                                                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X918054 Y737887                                                                      |              |                            |                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                                     |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                            |                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                     |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>6                                                                 |              |                            |                                                                                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                                     | DISTURBED<br>5                                                                                                                                                                                               |  |
|                                                                                                                              |              |                            |                                                                                         |                                                             |                                     | UNDISTURBED<br>0                                                                                                                                                                                             |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |              |                            |                                                                                         | 14. TOTAL NUMBER CORE BOXES                                 |                                     |                                                                                                                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                            |                                                                                         | 15. ELEVATION GROUND WATER                                  |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            |                                                                                         | 16. DATE HOLE STARTED<br>26 Aug 78                          |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            |                                                                                         | COMPLETED<br>26 Aug 78                                      |                                     |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 25.8'                                                                                             |              |                            |                                                                                         | 17. ELEVATION TOP OF HOLE 16.0' water depth                 |                                     |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                            |                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING 25.8' %                  |                                     |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 25.8'                                                                                                 |              |                            |                                                                                         | 19. SIGNATURE OF INSPECTOR<br>R. V. O'Kelley, Geologist     |                                     |                                                                                                                                                                                                              |  |
| ELEVATION<br>MLW<br>-4.1'                                                                                                    | DEPTH<br>0 b | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                       | % CORE<br>RECOVERY<br>e                                     | BOX OR<br>SAMPLE<br>NO.<br>f<br>TAP | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g                                                                                                                       |  |
|                                                                                                                              |              |                            | SM - Dark gray to black, organic, silty, fine sand                                      |                                                             | 1                                   | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                              |              |                            | Gray, moderate to high shell content                                                    |                                                             |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 5            |                            | Moderately silty, minor shell content                                                   |                                                             | 2                                   |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            | MH - Dark gray, slightly sandy, slightly clayey silt                                    |                                                             |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            | SM - Gray, moderately silty fine to medium sand with high shell content                 |                                                             | 3                                   |                                                                                                                                                                                                              |  |
|                                                                                                                              | 10           |                            | Minor to moderate shell content                                                         |                                                             |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            | Moderate to high shell content                                                          |                                                             | 4                                   |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            | Slightly to moderately silty minor shell content                                        |                                                             |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 15           |                            | Silty                                                                                   |                                                             |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              |              |                            | MH - Gray, moderately clayey to clayey silt                                             |                                                             | 5                                   |                                                                                                                                                                                                              |  |
|                                                                                                                              | 20           |                            |                                                                                         |                                                             |                                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 25           |                            | Bottom of Boring 25.8'                                                                  |                                                             |                                     |                                                                                                                                                                                                              |  |
| -39.9                                                                                                                        |              |                            | NOTE: Soils field classified in accordance with the Unified Soil Classification System. |                                                             |                                     |                                                                                                                                                                                                              |  |

Hole No. 7

| DRILLING LOG                                                                                                              |       | DIVISION       |                                                                                                                       | INSTALLATION                                             |                       | SHEET 1 OF 1 SHEETS                                                                                                                                                                                          |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |       | South Atlantic |                                                                                                                       | Tybee Beach                                              |                       |                                                                                                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)                                                                                      |       |                |                                                                                                                       | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                       |                                                                                                                                                                                                              |  |
| X917106 Y739104                                                                                                           |       |                |                                                                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or ASL)               |                       |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                |                                                                                                                       | MW                                                       |                       |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) 7                                                                 |       |                |                                                                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                       |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                |                                                                                                                       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                |                       | DISTURBED 5 UNDISTURBED 0                                                                                                                                                                                    |  |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       |                |                                                                                                                       | 14. TOTAL NUMBER CORE BOXES                              |                       |                                                                                                                                                                                                              |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                                                       | 15. ELEVATION GROUND WATER                               |                       |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 19.9'                                                                                          |       |                |                                                                                                                       | 16. DATE HOLE STARTED 26 Aug 78 COMPLETED 26 Aug 78      |                       |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                |                                                                                                                       | 17. ELEVATION TOP OF HOLE 15.0' water depth              |                       |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 19.9'                                                                                              |       |                |                                                                                                                       | 18. TOTAL CORE RECOVERY FOR BORING 19.9' %               |                       |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                |                                                                                                                       | 19. SIGNATURE OF INSPECTOR R. V. O'KELLEY, Geologist     |                       |                                                                                                                                                                                                              |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                             | % CORE RECOVERY                                          | BOX OR SAMPLE NO. JAR | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |
| 12.1 MHW                                                                                                                  | 0     |                |                                                                                                                       |                                                          | 1                     | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                           |       |                | SM - Dark gray, silty, fine sand                                                                                      |                                                          | 2                     |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                | MH - Gray, fine, sandy, slightly clayey silt                                                                          |                                                          | 3                     |                                                                                                                                                                                                              |  |
| 5                                                                                                                         |       |                | SM - Gray, silty, fine sand with minor shell content 6.1' to 6.5' gray, slightly clayey silt with some plant material |                                                          | 4                     |                                                                                                                                                                                                              |  |
| 10                                                                                                                        |       |                | High shell content, no plant material                                                                                 |                                                          | 5                     |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                | Moderate shell content                                                                                                |                                                          |                       |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                | Fine to medium, moderate to high oyster shell content, minor plant material                                           |                                                          |                       |                                                                                                                                                                                                              |  |
| 20                                                                                                                        |       |                | Sample loss Probable sand, silt and sea shells                                                                        |                                                          |                       |                                                                                                                                                                                                              |  |
| 25                                                                                                                        |       |                |                                                                                                                       |                                                          |                       |                                                                                                                                                                                                              |  |
| 39.1                                                                                                                      |       |                | Bottom of Boring 27.0'                                                                                                |                                                          |                       |                                                                                                                                                                                                              |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System.                                   |       |                |                                                                                                                       |                                                          |                       |                                                                                                                                                                                                              |  |

Hole No. 9

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic |                                                                                                                                     | INSTALLATION<br>Tybee Beach                                 |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion                                                                                        |             |                            |                                                                                                                                     | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X912931 Y 741022                                                                     |             |                            |                                                                                                                                     | 11. DATUM FOR ELEVATION SHOWN (TGM or MLL)                  |                                |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number) 9                                                                    |             |                            |                                                                                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                                | DISTURBED 4 UNDISTURBED 0                                                                                                                                                                                                            |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |             |                            |                                                                                                                                     | 14. TOTAL NUMBER CORE BOXES                                 |                                |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                                                     | 15. ELEVATION GROUND WATER                                  |                                |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 30.0'                                                                                             |             |                            |                                                                                                                                     | 16. DATE HOLE STARTED 1978 COMPLETED 1978                   |                                |                                                                                                                                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                                                                     | 17. ELEVATION TOP OF HOLE 9.0' water depth                  |                                |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 30.0'                                                                                                 |             |                            |                                                                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING %                        |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |             |                            |                                                                                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                                |                                                                                                                                                                                                                                      |  |
| ELEVATION<br>-4.1' MLLW                                                                                                      | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                   | % CORE<br>RECOV-<br>ERY<br>e                                | BOX OR<br>SAMPLE<br>NO.<br>JNR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                                            |  |
|                                                                                                                              | 5           |                            | SM - Gray, green, silty,<br>medium-fine sand<br>Brown silt lens 1.3'-1.5'                                                           |                                                             | 1                              | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 10          |                            | Slightly silty, coarse-<br>medium sand with shells 18%                                                                              |                                                             | 2                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15          |                            | Core loss 6.0'-16.0'                                                                                                                |                                                             |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 20          |                            | SM - Coarse-medium sand<br>slightly silty with shells<br>18%                                                                        |                                                             | 3                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 20          |                            | MH - Brown, fat, clayey silt<br>with medium sand inter-<br>layered 20%                                                              |                                                             | 4                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 25          |                            | SM - Gray, silty, medium-<br>fine sand with alternating<br>lenses of fat silt 30% and<br>with shells 5%<br>(24.7'-25.3' shells 35%) |                                                             |                                |                                                                                                                                                                                                                                      |  |
| -32.4                                                                                                                        |             |                            | Bottom of Boring 28.0'                                                                                                              |                                                             |                                | NOTE: Soils field<br>classified in accordance<br>with the Unified Classi-<br>fication Systems.                                                                                                                                       |  |

Hole No. 10

| DRILLING LOG                                                                                                                 |            | DIVISION        |                                                                                          | INSTALLATION                               |                                | SHEET                                                                                                                                                                                                        |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |            | South Atlantic  |                                                                                          | Tybee Beach                                |                                | OF 1 SHEETS                                                                                                                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)                                                                                         |            | X910352 Y741718 |                                                                                          | 10. SIZE AND TYPE OF BIT 4" Casing tube    |                                |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY Savannah District                                                                                         |            |                 |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) |                                | MLW                                                                                                                                                                                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number) 10                                                                   |            |                 |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                                | Alpine Vibracore                                                                                                                                                                                             |  |
| 5. NAME OF DRILLER Charles Dill                                                                                              |            |                 |                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN  |                                | DISTURBED 6 UNDISTURBED 0                                                                                                                                                                                    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                 |                                                                                          | 14. TOTAL NUMBER CORE BOXES                |                                |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 28.0'                                                                                             |            |                 |                                                                                          | 15. ELEVATION GROUND WATER                 |                                |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                 |                                                                                          | 16. DATE HOLE                              |                                | STARTED _____ COMPLETED _____                                                                                                                                                                                |  |
| 9. TOTAL DEPTH OF HOLE 28.0'                                                                                                 |            |                 |                                                                                          | 17. ELEVATION TOP OF HOLE 8.0' water depth |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING %       |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 |                                                                                          | 19. SIGNATURE OF INSPECTOR                 |                                | JAMES F. BOLEN Geologist                                                                                                                                                                                     |  |
| ELEVATION<br>MLW<br>-1.0'                                                                                                    | DEPTH<br>0 | LEGEND          | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE<br>RECOVERY<br>%                    | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                         |  |
|                                                                                                                              |            |                 | SM - Green, silty, medium sand with shells 5%                                            |                                            | 1                              | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                              |            |                 | Black, very silty                                                                        |                                            | 2                              |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | Black, fine, very silty                                                                  |                                            | 3                              |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | Gray                                                                                     |                                            | 4                              |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | Black, clayey silt seams: 5.7' (1½"), 6.5' (1½"), 7.9-8.0, 8.9-9.0', 9.6-9.7'            |                                            | 5                              |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | MH - Black, fat, clayey silt                                                             |                                            | 6                              |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | SM - Green, silty, medium-fine sand with silt seams: 11.8' to 12.0' 12.5' to 12.9'       |                                            |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | MH - Gray, fat, clayey silt with sand lenses 35%                                         |                                            |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | SM - Gray, silty, medium-fine sand with fine gravel sized shells 10%                     |                                            |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              |            |                 | MH - Gray, fat, clayey silt with fine sand lenses 15%                                    |                                            |                                |                                                                                                                                                                                                              |  |
| -27.0                                                                                                                        | 25         |                 | Bottom of Boring 25.2'                                                                   |                                            |                                |                                                                                                                                                                                                              |  |
|                                                                                                                              | 30         |                 | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems. |                                            |                                |                                                                                                                                                                                                              |  |



Hole No. 11

| DRILLING LOG                                                                                                              |             | DIVISION       | INSTALLATION                                                                                   |                    | SHEET 1<br>OF 1 SHEETS    |                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------|-------------|----------------|------------------------------------------------------------------------------------------------|--------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |             | South Atlantic | Savannah Harbor Outer Channel                                                                  |                    |                           |                                                                                                                                                                                                                                      |
| 2. LOCATION (Coordinates or Station) X911318 Y742641                                                                      |             |                | 10. SIZE AND TYPE OF BIT 4" Casing tube                                                        |                    |                           |                                                                                                                                                                                                                                      |
| 3. DRILLING AGENCY Savannah District                                                                                      |             |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                 |                    |                           |                                                                                                                                                                                                                                      |
| 4. HOLE NO. (As shown on drawing title and file number) 11                                                                |             |                | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibrocore                                       |                    |                           |                                                                                                                                                                                                                                      |
| 5. NAME OF DRILLER Charles Dill                                                                                           |             |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 2                                                   |                    | DISTURBED 2 UNDISTURBED 0 |                                                                                                                                                                                                                                      |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                | 14. TOTAL NUMBER CORE BOXES                                                                    |                    |                           |                                                                                                                                                                                                                                      |
| 7. THICKNESS OF OVERBURDEN 19.0'                                                                                          |             |                | 15. ELEVATION GROUND WATER                                                                     |                    |                           |                                                                                                                                                                                                                                      |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |             |                | 16. DATE HOLE STARTED 1978 COMPLETED 1978                                                      |                    |                           |                                                                                                                                                                                                                                      |
| 9. TOTAL DEPTH OF HOLE 19.0'                                                                                              |             |                | 17. ELEVATION TOP OF HOLE 15.0' water depth                                                    |                    |                           |                                                                                                                                                                                                                                      |
|                                                                                                                           |             |                | 18. TOTAL CORE RECOVERY FOR BORING 18.7'                                                       |                    | %                         |                                                                                                                                                                                                                                      |
|                                                                                                                           |             |                | 19. SIGNATURE OF INSPECTOR JACK M. KEETON, Geologist                                           |                    |                           |                                                                                                                                                                                                                                      |
| ELEVATION<br>ft                                                                                                           | DEPTH<br>ft | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOVERY | BOX OR<br>SAMPLE<br>NO.   | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)                                                                                                                                                  |
| -8.7                                                                                                                      | 0           |                | SM - Gray, slightly silty,<br>fine - medium grained sand                                       |                    | 1                         | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |
|                                                                                                                           | 5           |                | 6.0' to 18.7' with inter-<br>bedded lenses of gray MH                                          |                    | 2                         |                                                                                                                                                                                                                                      |
|                                                                                                                           | 10          |                |                                                                                                |                    |                           |                                                                                                                                                                                                                                      |
|                                                                                                                           | 15          |                |                                                                                                |                    |                           |                                                                                                                                                                                                                                      |
| -27.4                                                                                                                     |             |                | Bottom of Boring 18.7'                                                                         |                    |                           |                                                                                                                                                                                                                                      |
|                                                                                                                           |             |                | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                    |                           |                                                                                                                                                                                                                                      |

Hole No. 14

| DRILLING LOG                                                                            |             | DIVISION<br>South Atlantic                                                                                                   |                                                                                     | INSTALLATION Savannah harbor                            |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                       |  |
|-----------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                   |             | 2. LOCATION (Coordinates or Station)<br>X920478 Y737507                                                                      |                                                                                     | 3. DRILLING AGENCY<br>Savannah District                 |                                | 4. HOLE NO. (As shown on drawing title and file number)<br>14                                                                                                                                                |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                      |             | 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                     | 10. SIZE AND TYPE OF BIT 4" Casing tube                 |                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                                                                                                                            |  |
| 7. THICKNESS OF OVERBURDEN 18.7'                                                        |             | 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |                                                                                     | 9. TOTAL DEPTH OF HOLE 18.7'                            |                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore                                                                                                                                                  |  |
| 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                                               |             | 14. TOTAL NUMBER CORE BOXES                                                                                                  |                                                                                     | 15. ELEVATION GROUND WATER                              |                                | 16. DATE HOLE STARTED COMPLETED<br>1978 1978                                                                                                                                                                 |  |
| 17. ELEVATION TOP OF HOLE 40.0' water depth                                             |             | 18. TOTAL CORE RECOVERY FOR BORING                                                                                           |                                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist |                                | 20. REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                        |  |
| ELEVATION<br>MLW                                                                        | DEPTH<br>0' | LEGEND                                                                                                                       | CLASSIFICATION OF MATERIALS<br>(Description)                                        | % CORE<br>RECOVERY                                      | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS                                                                                                                                                                                                      |  |
| 39.2                                                                                    | 0           |                                                                                                                              | SM - Light brown and gray, mottled, silty medium - fine sand with shells 10%        |                                                         | 1                              | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                         | 5           |                                                                                                                              | SC - Gray, clayey, medium sand, with gravel sized shells 15%                        |                                                         | 2                              |                                                                                                                                                                                                              |  |
|                                                                                         | 10          |                                                                                                                              | SM - Gray, fine sand, highly silty with shells 10%                                  |                                                         | 3                              |                                                                                                                                                                                                              |  |
|                                                                                         | 15          |                                                                                                                              | SC - Gray, clayey, medium-fine sand                                                 |                                                         | 4                              |                                                                                                                                                                                                              |  |
|                                                                                         |             |                                                                                                                              | SM - Gray, silty, medium - fine sand with shells, silt seams at 16.0', 16.9', 17.4' |                                                         | 5                              |                                                                                                                                                                                                              |  |
|                                                                                         |             |                                                                                                                              | 18.2' Coarse-medium                                                                 |                                                         | 6                              |                                                                                                                                                                                                              |  |
|                                                                                         | 20          |                                                                                                                              | Silty fine sand                                                                     |                                                         | 7                              |                                                                                                                                                                                                              |  |
| -61.2                                                                                   |             |                                                                                                                              | Silt seam 21.6' to 21.7'<br>Bottom of Boring 22.3'                                  |                                                         |                                |                                                                                                                                                                                                              |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification Systems |             |                                                                                                                              |                                                                                     |                                                         |                                |                                                                                                                                                                                                              |  |

Hole No. 15 Run 1

| DRILLING LOG                                                                                                                 |              | DIVISION       | INSTALLATION                                                                                         | Savannah Harbor     |                       |                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|------------------------------------------------------------------------------------------------------|---------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                              |              | South Atlantic | Outer Channel                                                                                        | SHEET 1 OF 1 SHEETS |                       |                                                                                                                                                                                                              |
| 1. PROJECT<br>Tybee Island Beach Erosion Control Project                                                                     |              |                | 10. SIZE AND TYPE OF BIT 4" Casing tube                                                              |                     |                       |                                                                                                                                                                                                              |
| 2. LOCATION (Coordinates or Station)<br>Y925182 Y733137                                                                      |              |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                    |                     |                       |                                                                                                                                                                                                              |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore                                          |                     |                       |                                                                                                                                                                                                              |
| 4. HOLE NO. (As shown on drawing title and file number)<br>15 Run 1                                                          |              |                | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN<br>DISTURBED 4 UNDISTURBED 0                               |                     |                       |                                                                                                                                                                                                              |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |              |                | 14. TOTAL NUMBER CORE BOXES                                                                          |                     |                       |                                                                                                                                                                                                              |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                | 15. ELEVATION GROUND WATER                                                                           |                     |                       |                                                                                                                                                                                                              |
| 7. THICKNESS OF OVERBURDEN 16.0'                                                                                             |              |                | 16. DATE HOLE STARTED 29 Aug 78 COMPLETED 29 Aug 78                                                  |                     |                       |                                                                                                                                                                                                              |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                | 17. ELEVATION TOP OF HOLE 17.0' water depth                                                          |                     |                       |                                                                                                                                                                                                              |
| 9. TOTAL DEPTH OF HOLE 16.0'                                                                                                 |              |                | 18. TOTAL CORE RECOVERY FOR BORING 12.5 %                                                            |                     |                       |                                                                                                                                                                                                              |
|                                                                                                                              |              |                | 19. SIGNATURE OF INSPECTOR<br>R. V. O'KELLEY                                                         |                     |                       |                                                                                                                                                                                                              |
| ELEVATION                                                                                                                    | DEPTH        | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                            | % CORE RECOVERY     | BOX OR SAMPLE NO. JAR | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |
| -15.6 MLW                                                                                                                    | 0 b          | c              | d                                                                                                    | e                   |                       |                                                                                                                                                                                                              |
|                                                                                                                              | 5            |                | SM - Gray, very slightly silty, fine sand with minor shell content                                   |                     | 1                     | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |
|                                                                                                                              | 10           |                | Slightly silty                                                                                       |                     | 2                     |                                                                                                                                                                                                              |
|                                                                                                                              | 11.6 to 11.8 |                | Silty with minor to moderate shell content. 11.6 to 11.8 thin gray, soft, slightly clayey silt layer |                     | 3                     |                                                                                                                                                                                                              |
|                                                                                                                              | 15           |                | Bottom of Boring 16.0'                                                                               |                     | 4                     |                                                                                                                                                                                                              |
| -31.6                                                                                                                        |              |                | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.             |                     |                       |                                                                                                                                                                                                              |

Hole No. 15 Run 2

| DRILLING LOG                                            |       | DIVISION                                                                                             |                                                                                                                                       | INSTALLATION                               |                   | Savannah Harbor                                                                                                                                                                                              |  | SHEET 1     |  |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------|--|
| 1. PROJECT                                              |       | South Atlantic                                                                                       |                                                                                                                                       | Outer Channel                              |                   | OF 1 SHEETS                                                                                                                                                                                                  |  |             |  |
| Tybee Island Beach Erosion Control Project              |       |                                                                                                      |                                                                                                                                       | 10. SIZE AND TYPE OF BIT                   |                   | 4" Casing Tube                                                                                                                                                                                               |  |             |  |
| 2. LOCATION (Coordinates or Station)                    |       |                                                                                                      |                                                                                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) |                   | MLW                                                                                                                                                                                                          |  |             |  |
| V925100 Y732928                                         |       |                                                                                                      |                                                                                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | Alpine Vibracore                                                                                                                                                                                             |  |             |  |
| 3. DRILLING AGENCY                                      |       |                                                                                                      |                                                                                                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                   | DISTURBED                                                                                                                                                                                                    |  | UNDISTURBED |  |
| Savannah District                                       |       |                                                                                                      |                                                                                                                                       |                                            |                   | 4                                                                                                                                                                                                            |  | 0           |  |
| 4. HOLE NO. (As shown on drawing title and file number) |       | 15 Run 2                                                                                             |                                                                                                                                       | 14. TOTAL NUMBER CORE BOXES                |                   |                                                                                                                                                                                                              |  |             |  |
| 5. NAME OF DRILLER                                      |       | CHARLES DILL                                                                                         |                                                                                                                                       | 15. ELEVATION GROUND WATER                 |                   |                                                                                                                                                                                                              |  |             |  |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                                                       | 16. DATE HOLE                              |                   | STARTED                                                                                                                                                                                                      |  | COMPLETED   |  |
|                                                         |       |                                                                                                      |                                                                                                                                       | 8 Sep 78                                   |                   | 8 Sep 78                                                                                                                                                                                                     |  |             |  |
| 7. THICKNESS OF OVERBURDEN                              |       | 17.0'                                                                                                |                                                                                                                                       | 17. ELEVATION TOP OF HOLE                  |                   | 30.0' water depth                                                                                                                                                                                            |  |             |  |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                                                 |                                                                                                                                       | 18. TOTAL CORE RECOVERY FOR BORING         |                   | 19.6'                                                                                                                                                                                                        |  |             |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 17.0'                                                                                                |                                                                                                                                       | 19. SIGNATURE OF INSPECTOR                 |                   | R. V. O'KELLEY                                                                                                                                                                                               |  |             |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                                             | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |             |  |
| 28.6                                                    | 0     |                                                                                                      |                                                                                                                                       |                                            |                   |                                                                                                                                                                                                              |  |             |  |
|                                                         | 5     |                                                                                                      | SM - Gray, silty, medium to coarse sand with minor shell and wood content                                                             |                                            | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |             |  |
|                                                         |       |                                                                                                      | Moderate shell content                                                                                                                |                                            | 2                 |                                                                                                                                                                                                              |  |             |  |
|                                                         | 10    |                                                                                                      | Fine to medium sand with minor coarse sand and minor to moderate shell content                                                        |                                            | 3                 |                                                                                                                                                                                                              |  |             |  |
|                                                         | 15    |                                                                                                      |                                                                                                                                       |                                            | 4                 |                                                                                                                                                                                                              |  |             |  |
| -48.2                                                   |       |                                                                                                      | Fine sand with moderate to high shell content and some fossil fragments. 19.3 to 19.6 large fragment of gray, fossiliferous limestone |                                            |                   |                                                                                                                                                                                                              |  |             |  |
|                                                         |       |                                                                                                      | Bottom of Boring 19.6'                                                                                                                |                                            |                   |                                                                                                                                                                                                              |  |             |  |
|                                                         |       |                                                                                                      | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                                              |                                            |                   |                                                                                                                                                                                                              |  |             |  |

Hole No. 29

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                | INSTALLATION Sava. h Harbor<br>Outer Channel                |                         | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |       |                            |                                                                                                | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                         |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X920108 Y738867                                                                      |       |                            |                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                         |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                         |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number) 29                                                                   |       |                            |                                                                                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                         | DISTURBED 4 UNDISTURBED 0                                                                                                                                                                                                            |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                | 14. TOTAL NUMBER CORE BOXES                                 |                         |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                | 15. ELEVATION GROUND WATER                                  |                         |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 19.0'                                                                                             |       |                            |                                                                                                | 16. DATE HOLE STARTED 1978 COMPLETED 1978                   |                         |                                                                                                                                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                | 17. ELEVATION TOP OF HOLE 43.0' water depth                 |                         |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 19.0'                                                                                                 |       |                            |                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING %                        |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            |                                                                                                | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                         |                                                                                                                                                                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOVERY                                          | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                                                 |  |
| 38.7' MLW                                                                                                                    | 0b    | c                          | d                                                                                              |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | SM - 0.0' to 0.4' black<br>Gray, silty, coarse to fine<br>sand                                 |                                                             | 1                       | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 5     |                            | SM-SC - Gray, silty, coarse<br>-fine sand with clay; with<br>shells 7%                         |                                                             | 2                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 10    |                            | SC - Green, clayey, fine<br>sand, dense, stiff with<br>shells 5%                               |                                                             | 3                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15    |                            |                                                                                                |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 20    |                            |                                                                                                |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 25    |                            |                                                                                                |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | Bottom of Boring 27.5'                                                                         |                                                             | 4                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                                                             |                         |                                                                                                                                                                                                                                      |  |

Hole No. 30

| DRILLING LOG                                                                                                              |       | DIVISION       | INSTALLATION                                                                                                              | SHEET 1 OF 1 SHEETS |                   |                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------|---------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |       | South Atlantic | Outer Channel Savannah Harbor                                                                                             |                     |                   |                                                                                                                                                                                                              |
| 2. LOCATION (Coordinates or Station) Y918803 Y739124                                                                      |       |                | 10. SIZE AND TYPE OF BIT 4" Casing tube                                                                                   |                     |                   |                                                                                                                                                                                                              |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or HSL) MLW                                                                            |                     |                   |                                                                                                                                                                                                              |
| 4. HOLE NO. (As shown on drawing title and file number) 30                                                                |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore                                                                  |                     |                   |                                                                                                                                                                                                              |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                                | DISTURBED 5         | UNDISTURBED 0     |                                                                                                                                                                                                              |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 14. TOTAL NUMBER CORE BOXES                                                                                               |                     |                   |                                                                                                                                                                                                              |
| 7. THICKNESS OF OVERBURDEN 23.0'                                                                                          |       |                | 15. ELEVATION GROUND WATER                                                                                                |                     |                   |                                                                                                                                                                                                              |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                | 16. DATE HOLE                                                                                                             | STARTED 1978        | COMPLETED 1978    |                                                                                                                                                                                                              |
| 9. TOTAL DEPTH OF HOLE 23.0'                                                                                              |       |                | 17. ELEVATION TOP OF HOLE 28.0' water depth                                                                               |                     |                   |                                                                                                                                                                                                              |
|                                                                                                                           |       |                | 18. TOTAL CORE RECOVERY FOR BORING %                                                                                      |                     |                   |                                                                                                                                                                                                              |
|                                                                                                                           |       |                | 19. SIGNATURE OF INSPECTOR JAMES E. BOLEN, Geologist                                                                      |                     |                   |                                                                                                                                                                                                              |
| ELEVATION                                                                                                                 | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                                 | % CORE RECOVERY     | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |
| -24.5' MLW                                                                                                                | 0b    | c              | d                                                                                                                         | e                   | f                 | g                                                                                                                                                                                                            |
|                                                                                                                           | 5     |                | MH - with organic matter 0.0' to 0.5' Gray-green, fat clayey silt with fossiliferous silty sand lenses 20%                |                     | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |
|                                                                                                                           | 10    |                | SM - Gray, slightly silty, medium sand with gravel sized shells 10%                                                       |                     | 2                 |                                                                                                                                                                                                              |
|                                                                                                                           | 15    |                | SC - Gray, clayey, coarse-medium sand with shells 20%                                                                     |                     | 3                 |                                                                                                                                                                                                              |
|                                                                                                                           | 20    |                | MH - Gray-green, fat clayey silt with coarse sand and shell inclusions 15% woody (fibrous) lenses 17.0', 17.9', and 24.3' |                     | 4                 |                                                                                                                                                                                                              |
|                                                                                                                           | 25    |                | SM - Gray, silty, medium - fine sand                                                                                      |                     | 5                 |                                                                                                                                                                                                              |
| -53.7                                                                                                                     |       |                | MH - Green, fat, clayey silt                                                                                              |                     |                   | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                                                                                                                     |
|                                                                                                                           |       |                | Bottom of Boring 29.2'                                                                                                    |                     |                   |                                                                                                                                                                                                              |

Hole No. 31

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                          | INSTALLATION Savannah Harbor<br>Outer Channel               |                         | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |       |                            |                                                                                          | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                         |                                                                                                                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>X917131 7740977                                                                      |       |                            |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                         |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                         |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) 31                                                                   |       |                            |                                                                                          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                         | DISTURBED 3 UNDISTURBED 0                                                                                                                                                                                    |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                          | 14. TOTAL NUMBER CORE BOXES                                 |                         |                                                                                                                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                          | 15. ELEVATION GROUND WATER                                  |                         |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 18.0'                                                                                             |       |                            |                                                                                          | 16. DATE HOLE STARTED 1978 COMPLETED 1978                   |                         |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                          | 17. ELEVATION TOP OF HOLE 29.0' water depth                 |                         |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 18.0'                                                                                                 |       |                            |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING                          |                         |                                                                                                                                                                                                              |  |
|                                                                                                                              |       |                            |                                                                                          | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                         |                                                                                                                                                                                                              |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                             | % CORE<br>RECOVERY                                          | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                         |  |
| 26.6 MLW                                                                                                                     | 0 b   | c                          |                                                                                          | *                                                           | JAR                     |                                                                                                                                                                                                              |  |
|                                                                                                                              | 5     |                            | SM - Gray, silty, medium - fine sand with shells 15%                                     |                                                             | 1                       | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                              |       |                            | Gray, silty, fine sand with alternating silt lenses 15%                                  |                                                             | 2                       |                                                                                                                                                                                                              |  |
|                                                                                                                              | 10    |                            |                                                                                          |                                                             |                         |                                                                                                                                                                                                              |  |
|                                                                                                                              | 15    |                            | ML - Gray, sandy (fine) silt                                                             |                                                             |                         |                                                                                                                                                                                                              |  |
|                                                                                                                              |       |                            | SM - Gray, silty, medium-fine sand with alternating silt lenses 15%                      |                                                             |                         |                                                                                                                                                                                                              |  |
|                                                                                                                              | 20    |                            | Fine sand, slightly silty Gray (MH) lenses: 22.2', 22.5'                                 |                                                             | 3                       |                                                                                                                                                                                                              |  |
| 49.3                                                                                                                         |       |                            | Bottom of Boring 22.7'                                                                   |                                                             |                         |                                                                                                                                                                                                              |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems. |                                                             |                         |                                                                                                                                                                                                              |  |

Hole No. 32

| DRILLING LOG                                                                                                              |       | DIVISION       | INSTALLATION                                                                             |                 | Savannah Harbor                            |                                                                                | SHEET 1 OF 1 SHEETS |                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------|------------------------------------------------------------------------------------------|-----------------|--------------------------------------------|--------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |       | South Atlantic | Outer Channel                                                                            |                 | 10. SIZE AND TYPE OF BIT 4" Casing tube    |                                                                                |                     |                                                                                                                                                                                                              |
| 2. LOCATION (Coordinates or Station) X917682 Y741749                                                                      |       |                | MLW                                                                                      |                 | 11. DATUM FOR ELEVATION SHOWN (FMS or MSL) |                                                                                |                     |                                                                                                                                                                                                              |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                | Alpine Vibracore                                                                         |                 | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                                                                                |                     |                                                                                                                                                                                                              |
| 4. HOLE NO. (As shown on drawing title and file number) 32                                                                |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                               |                 | DISTURBED 5                                |                                                                                | UNDISTURBED 0       |                                                                                                                                                                                                              |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       |                | 14. TOTAL NUMBER CORE BOXES                                                              |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                | 15. ELEVATION GROUND WATER                                                               |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
| 7. THICKNESS OF OVERBURDEN 27.3'                                                                                          |       |                | 16. DATE HOLE 2 Sep 78                                                                   |                 | STARTED 2 Sep 78                           |                                                                                | COMPLETED 2 Sep 78  |                                                                                                                                                                                                              |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                | 17. ELEVATION TOP OF HOLE 45.0' water depth                                              |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
| 9. TOTAL DEPTH OF HOLE 27.3'                                                                                              |       |                | 18. TOTAL CORE RECOVERY FOR BORING 27.3'                                                 |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
|                                                                                                                           |       |                | 19. SIGNATURE OF INSPECTOR R. V. O'KELLEY                                                |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
| ELEVATION                                                                                                                 | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                | % CORE RECOVERY | BOX OR SAMPLE NO. JAR                      | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |                     |                                                                                                                                                                                                              |
| -44.4                                                                                                                     | 0     | MLW 0          |                                                                                          |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
|                                                                                                                           | 5     |                | SM - Gray, slightly silty, fine to medium sand with minor to moderate shell content      |                 | 1                                          |                                                                                |                     |                                                                                                                                                                                                              |
|                                                                                                                           | 10    |                | Moderately silty with moderate to high shell content                                     |                 | 2                                          |                                                                                |                     | NOTE: Sample expanded approximately 7.3' during drilling.                                                                                                                                                    |
|                                                                                                                           | 15    |                | Grayish green, silty, fine, minor shell fragments                                        |                 | 3                                          |                                                                                |                     | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |
|                                                                                                                           | 20    |                |                                                                                          |                 | 4                                          |                                                                                |                     |                                                                                                                                                                                                              |
|                                                                                                                           | 25    |                |                                                                                          |                 | 5                                          |                                                                                |                     |                                                                                                                                                                                                              |
| -71.4                                                                                                                     |       |                | Bottom of Boring 27.3'                                                                   |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |
|                                                                                                                           |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems. |                 |                                            |                                                                                |                     |                                                                                                                                                                                                              |



Hole No. 33

| DRILLING LOG                                                                                                                 |  | DIVISION       |  | INSTALLATION                                                |  | SHEET             |  |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------|--|-------------------------------------------------------------|--|-------------------|--|
| Tybee Island Beach Erosion Control Project                                                                                   |  | South Atlantic |  | Savannah Harbor Outer Channel                               |  | 1 OF 1 SHEETS     |  |
| 2. LOCATION (Coordinates or Station)<br>X914419 Y741984                                                                      |  |                |  | 10. SIZE AND TYPE OF BIT<br>4" Casing tube                  |  |                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  |                |  | 11. DATUM FOR ELEVATION SHOWN (VBM or MSL)<br>MLW           |  |                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>33                                                                |  |                |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |  |                   |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |  |                |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |  | DISTURBED<br>4    |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                |  | 14. TOTAL NUMBER CORE BOXES                                 |  | UNDISTURBED<br>0  |  |
| 7. THICKNESS OF OVERBURDEN<br>26.0'                                                                                          |  |                |  | 15. ELEVATION GROUND WATER                                  |  |                   |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |  |                |  | 16. DATE HOLE                                               |  | STARTED<br>1978   |  |
| 9. TOTAL DEPTH OF HOLE<br>26.0'                                                                                              |  |                |  | 17. ELEVATION TOP OF HOLE<br>20.0' water depth              |  | COMPLETED<br>1978 |  |
|                                                                                                                              |  |                |  | 18. TOTAL CORE RECOVERY FOR BORING<br>%                     |  |                   |  |
|                                                                                                                              |  |                |  | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |  |                   |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS<br>(Description)                                                                 | % CORE<br>RECOV-<br>ERY | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                         |
|-----------|-------|--------|--------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -19.9 MLW | 0     | c      | SM - Gray, fine sand slightly silty                                                                          | *                       | 1                       | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |
|           | 5     |        | Black<br>3.8' to 5.1' with black silt lenses 15%                                                             |                         | 2                       |                                                                                                                                                                                                              |
|           | 10    |        | MH - Black, fat, clayey silt with organic matter and fine and medium sand lenses 20%                         |                         | 3                       |                                                                                                                                                                                                              |
|           | 15    |        | SM - Gray, medium and fine sand, slightly silty, gray silt lenses: 17.3' - 17.7' 19.2' - 19.5' 20.2' - 20.5' |                         | 4                       |                                                                                                                                                                                                              |
|           | 20    |        | SM-SC - Dark green, silty fine sand, slightly clayey, dense                                                  |                         |                         |                                                                                                                                                                                                              |
|           | 25    |        | Bottom of Boring 26.3'                                                                                       |                         |                         |                                                                                                                                                                                                              |
|           |       |        | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                     |                         |                         |                                                                                                                                                                                                              |

-46.2

Hole No. 34

| DRILLING LOG                                                                                                                 |             | DIVISION<br>South Atlantic |                                                                                                                     | INSTALLATION Savannah Harbor<br>Outer Channel               |                                 | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion<br>Control Project                                                                     |             |                            |                                                                                                                     | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                 |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X912402 Y743816                                                                      |             |                            |                                                                                                                     | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                                 |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |             |                            |                                                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                 |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title<br>and file number) 34                                                                |             |                            |                                                                                                                     | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN              |                                 | DISTURBED 4 UNDISTURBED 0                                                                                                                                                                                                            |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |             |                            |                                                                                                                     | 14. TOTAL NUMBER CORE BOXES                                 |                                 |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                            |                                                                                                                     | 15. ELEVATION GROUND WATER                                  |                                 |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 12.0'                                                                                             |             |                            |                                                                                                                     | 16. DATE HOLE STARTED 1978 COMPLETED 1978                   |                                 |                                                                                                                                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |             |                            |                                                                                                                     | 17. ELEVATION TOP OF HOLE 40.0' water depth                 |                                 |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 12.0'                                                                                                 |             |                            |                                                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING %                        |                                 |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |             |                            |                                                                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                                 |                                                                                                                                                                                                                                      |  |
| ELEVATION<br>-39.1' MLW                                                                                                      | DEPTH<br>0' | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                   | % CORE<br>RECOV-<br>ERY<br>e                                | CORE OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f                                                                                                                                            |  |
|                                                                                                                              |             |                            | SM - Black, silty, medium<br>fine sand with shells,<br>with organic fines<br>MH - Gray laminated fat<br>clayey silt |                                                             | 1                               | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 5           |                            | SM - Gray coarse-medium sand<br>slightly silty with shells,<br>Fat silt lenses: 2.0'-2.3'<br>3.1', 3.4'-5.4'        |                                                             | 2                               |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 10          |                            | SC - Dark green, clayey, fine<br>sand, stiff, dense                                                                 |                                                             | 3                               |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15          |                            |                                                                                                                     |                                                             | 4                               |                                                                                                                                                                                                                                      |  |
| -56.0                                                                                                                        |             |                            | Bottom of Boring 16.7'                                                                                              |                                                             |                                 |                                                                                                                                                                                                                                      |  |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems.                               |             |                            |                                                                                                                     |                                                             |                                 |                                                                                                                                                                                                                                      |  |

Hole No. 35

| DRILLING LOG                                                                                                              |       | DIVISION       |                                                                                          | INSTALLATION                                             |                   | Savannah Harbor                                                                                                                                                                                              |  | SHEET 1 OF 1 SHEETS |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------|------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |       | South Atlantic |                                                                                          | Outer Channel                                            |                   |                                                                                                                                                                                                              |  |                     |  |
| 2. LOCATION (Coordinates or Station)                                                                                      |       |                |                                                                                          | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                   |                                                                                                                                                                                                              |  |                     |  |
| X 923953 Y 743165                                                                                                         |       |                |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (FDM or MSL)               |                   |                                                                                                                                                                                                              |  |                     |  |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                   |                                                                                                                                                                                                              |  |                     |  |
| 4. HOLE NO. (As shown on drawing title and file number) 35                                                                |       |                |                                                                                          | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                |                   | DISTURBED 5                                                                                                                                                                                                  |  | UNDISTURBED 0       |  |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       |                |                                                                                          | 14. TOTAL NUMBER CORE BOXES                              |                   |                                                                                                                                                                                                              |  |                     |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                          | 15. ELEVATION GROUND WATER                               |                   |                                                                                                                                                                                                              |  |                     |  |
| 7. THICKNESS OF OVERBURDEN 20.0'                                                                                          |       |                |                                                                                          | 16. DATE HOLE STARTED 8 Sep 78                           |                   | COMPLETED 8 Sep 78                                                                                                                                                                                           |  |                     |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                |                                                                                          | 17. ELEVATION TOP OF HOLE 44.0' water depth              |                   |                                                                                                                                                                                                              |  |                     |  |
| 9. TOTAL DEPTH OF HOLE 20.0'                                                                                              |       |                |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING 20.0'                 |                   |                                                                                                                                                                                                              |  |                     |  |
|                                                                                                                           |       |                |                                                                                          | 19. SIGNATURE OF INSPECTOR CHARLES D. GRIFFIN            |                   |                                                                                                                                                                                                              |  |                     |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                | % CORE RECOVERY                                          | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |                     |  |
| -39.3' MLW                                                                                                                | 0     | c              | SM - Gray, silty, fine and medium sand with some shells and fragments                    |                                                          | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |                     |  |
|                                                                                                                           | 5     |                |                                                                                          |                                                          | 2                 |                                                                                                                                                                                                              |  |                     |  |
|                                                                                                                           | 10    |                | SP - Gray, poorly graded medium sand                                                     |                                                          | 3                 |                                                                                                                                                                                                              |  |                     |  |
|                                                                                                                           | 15    |                | SM - Gray, silty, fine sand with shells and fragments                                    |                                                          | 4                 |                                                                                                                                                                                                              |  |                     |  |
|                                                                                                                           | 20    |                | Gray, medium to coarse sand, silty with sea shells<br>Bottom of Boring 20.0'             |                                                          | 5                 |                                                                                                                                                                                                              |  |                     |  |
| -59.2                                                                                                                     |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems. |                                                          |                   |                                                                                                                                                                                                              |  |                     |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                | INSTALLATION Savannah Harbor<br>Outer Channel               |                                | Hole No. 37<br>SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                        |       |                            |                                                                                                | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X927794 Y729908                                                                      |       |                            |                                                                                                | 11. DATUM FOR ELEVATION SHOWN (BSM or MSL)<br>MLW           |                                |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>37                                                                |       |                            |                                                                                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                  |                                | DISTURBED 4<br>UNDISTURBED 0                                                                                                                                                                                                         |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                | 14. TOTAL NUMBER CORE BOXES                                 |                                |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                | 15. ELEVATION GROUND WATER                                  |                                |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>24.0'                                                                                          |       |                            |                                                                                                | 16. DATE HOLE                                               |                                | STARTED 8 Sep 78<br>COMPLETED 8 Sep 78                                                                                                                                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                | 17. ELEVATION TOP OF HOLE                                   |                                | 17.0' water depth                                                                                                                                                                                                                    |  |
| 9. TOTAL DEPTH OF HOLE<br>24.0'                                                                                              |       |                            |                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING                          |                                | 15.6'                                                                                                                                                                                                                                |  |
|                                                                                                                              |       |                            |                                                                                                | 19. SIGNATURE OF INSPECTOR<br>R. V. O'KEEFEY                |                                |                                                                                                                                                                                                                                      |  |
| ELEVATION<br>-10.6' MLW                                                                                                      | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOVER-<br>ERY                                   | BOX OR<br>SAMPLE<br>NO.<br>IAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                                                 |  |
|                                                                                                                              | 0     |                            | SM - Light tan to light gray,<br>very slightly silty, fine<br>sand with minor shell<br>content |                                                             | 1                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 5     |                            | Light gray                                                                                     |                                                             | 2                              | NOTE: Sample expanded<br>approximately 1.8' during<br>drilling.                                                                                                                                                                      |  |
|                                                                                                                              | 10    |                            |                                                                                                |                                                             | 3                              | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 15    |                            | Greenish gray with<br>moderate to high<br>shell                                                |                                                             | 4                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 20    |                            | Probable sand, silt, and sea<br>shells. Sample loss.                                           |                                                             |                                |                                                                                                                                                                                                                                      |  |
| -34.6                                                                                                                        |       |                            | Bottom of Boring 24.0'                                                                         |                                                             |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                                                             |                                |                                                                                                                                                                                                                                      |  |

Hole No. SH-337

| DRILLING LOG                                                                                                                 |              | FROM SOUTH ATLANTIC |                                                                                                                                        | INSTALLATION SAVANNAH, GA.                                                     |                                | SHEET 1 OF 1 SHEETS                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                     |                                                                                                                                        | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                   |                                |                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-910126 Y-743419 GA. EAST                                                           |              |                     |                                                                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                                |                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                     |                                                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                         |                                |                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-337                                                            |              |                     |                                                                                                                                        | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 7<br>UNDISTURBED : 0 |                                |                                                                                           |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                     |                                                                                                                                        | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                                |                                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                     |                                                                                                                                        | 15. ELEVATION GROUND WATER N/A                                                 |                                |                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 63.6'                                                                                             |              |                     |                                                                                                                                        | 16. DATE HOLE : STARTED : 17 MAR 92 : COMPLETED : 17 MAR 92                    |                                |                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                     |                                                                                                                                        | 17. ELEVATION TOP OF HOLE 0.0'                                                 |                                |                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE 63.6'                                                                                                 |              |                     |                                                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                       |                                |                                                                                           |  |
|                                                                                                                              |              |                     |                                                                                                                                        | 19. SIGNATURE OF INSPECTOR<br>MICHAEL BAILEY                                   |                                |                                                                                           |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                      | % CORE<br>RECOV-<br>ERY<br>e                                                   | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f |  |
|                                                                                                                              |              |                     | Water                                                                                                                                  |                                                                                |                                | Scale change at 40.0'.                                                                    |  |
|                                                                                                                              | 40           |                     | Bottom of Harbor 43.6'                                                                                                                 |                                                                                |                                |                                                                                           |  |
| -43.6'                                                                                                                       |              |                     | (SM) Dark gray to black, fine grained silty SAND. Some shells & clay.                                                                  |                                                                                | 1                              |                                                                                           |  |
| -44.0'                                                                                                                       | 45           |                     | (SC) Olive, fine grained, clayey SAND. Some silt, trace of black, rounded & generally flat coarse grained sand to fine grained gravel. |                                                                                | 2                              | Weight of rods drove split spoon to 45.6'; following drives are from this depth.          |  |
|                                                                                                                              | 50           |                     |                                                                                                                                        |                                                                                | 3                              |                                                                                           |  |
| -53.1'                                                                                                                       |              |                     | Dark olive.                                                                                                                            |                                                                                |                                |                                                                                           |  |
|                                                                                                                              | 55           |                     |                                                                                                                                        |                                                                                | 4                              |                                                                                           |  |
| -56.1'                                                                                                                       |              |                     | Some black coarse sand to fine gravel.                                                                                                 |                                                                                |                                |                                                                                           |  |
| -58.6'                                                                                                                       |              |                     | (CH) Gray to olive-gray, fat CLAY. Trace of sand layers.                                                                               |                                                                                | 5                              |                                                                                           |  |
| -59.4'                                                                                                                       | 60           |                     | (SC) Dark olive-gray to black, fine to medium grained, clayey SAND.                                                                    |                                                                                | 6                              |                                                                                           |  |
|                                                                                                                              |              |                     |                                                                                                                                        |                                                                                | 7                              |                                                                                           |  |
| -63.6'                                                                                                                       | 65           |                     | Bottom of Boring 63.6'                                                                                                                 |                                                                                |                                | BLOWS PER FOOT:                                                                           |  |
|                                                                                                                              |              |                     | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                                       |                                                                                |                                | Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30".            |  |

Hole No. SH-340

| DRILLING LOG                                                                                                                 |              | TOWN<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                                  |                              | SHEET 1<br>OF 1 SHEETS                                                                           |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                        |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5 1/2" FISHTAIL                 |                              |                                                                                                  |  |
| 2. LOCATION (Coordinates or Station)<br>X=912859 Y=743510 GA. EAST                                                           |              |                        |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                              |                              |                                                                                                  |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                        |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                         |                              |                                                                                                  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-340                                                            |              |                        |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED : 5<br>UNDISTURBED : 0 |                              |                                                                                                  |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                        |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                               |                              |                                                                                                  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                        |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                                 |                              |                                                                                                  |  |
| 7. THICKNESS OF OVERBURDEN 59.5' (Water 41.5')                                                                               |              |                        |                                                                                                  | 16. DATE HOLE<br>STARTED : 13 DEC 91<br>COMPLETED : 13 DEC 91                  |                              |                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                        |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                                 |                              |                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.5'                                                                                                 |              |                        |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING N/A                                         |                              |                                                                                                  |  |
|                                                                                                                              |              |                        |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                               |                              |                                                                                                  |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c            | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                                                   | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g        |  |
|                                                                                                                              |              |                        | Water                                                                                            |                                                                                |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 42.5'.                            |  |
|                                                                                                                              | 40           |                        | Bottom of Harbor -41.5'                                                                          |                                                                                |                              |                                                                                                  |  |
| -41.5'                                                                                                                       |              |                        | FSC Olive, fine clayey SAND. Trace of shell fragments.                                           |                                                                                | 1                            |                                                                                                  |  |
|                                                                                                                              |              |                        |                                                                                                  | 2                                                                              |                              |                                                                                                  |  |
|                                                                                                                              |              |                        |                                                                                                  |                                                                                | 3                            |                                                                                                  |  |
|                                                                                                                              |              |                        |                                                                                                  |                                                                                | 4                            |                                                                                                  |  |
|                                                                                                                              |              |                        |                                                                                                  |                                                                                | 5                            |                                                                                                  |  |
| -56.5'                                                                                                                       | 55           |                        | Fine to medium, low thin streaks of stiff, grey, fat clay.                                       |                                                                                |                              |                                                                                                  |  |
| -58.0'                                                                                                                       |              |                        | Olive-grey.                                                                                      |                                                                                |                              |                                                                                                  |  |
| -59.5'                                                                                                                       | 60           |                        | Bottom of Boring 59.5'                                                                           |                                                                                |                              |                                                                                                  |  |
|                                                                                                                              |              |                        | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                                |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30". |  |

Hole No. SH-341

| DRILLING LOG                                                                                                                 |            | DIRECTION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                  |                              | SHEET 1<br>OF 1 SHEETS                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                             |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 3/4" SPLITSPOON, 5 1/2" FISHTAIL |                              |                                                                                                    |  |
| 2. LOCATION (Coordinates or Station)<br>X=913565 Y=742978 GA. EAST                                                           |            |                             |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSU)<br>MLW              |                              |                                                                                                    |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                             |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314         |                              |                                                                                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-341                                                            |            |                             |                                                                                                  | BURDEN SAMPLES TAKEN                                           |                              | DISTURBED<br>4<br>UNDISTURBED<br>0                                                                 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                             |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                               |                              | 15. ELEVATION GROUND WATER N/A                                                                     |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                             |                                                                                                  | 16. DATE HOLE                                                  |                              | STARTED<br>12 MAR 92<br>COMPLETED<br>12 MAR 92                                                     |  |
| 7. THICKNESS OF OVERBURDEN<br>60.3' (Water 45.3')                                                                            |            |                             |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                              |                              | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                          |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                             |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.               |                              |                                                                                                    |  |
| 9. TOTAL DEPTH OF HOLE<br>60.3'                                                                                              |            |                             |                                                                                                  |                                                                |                              |                                                                                                    |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c                 | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVERY<br>e                                        | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g<br>BLOWS |  |
|                                                                                                                              |            |                             | Water                                                                                            |                                                                |                              | Scale change at 45.0'. Set 6" diameter casing by own weight to 45.2'.                              |  |
| -45.3'                                                                                                                       | 45         |                             | Bottom of Harbor 45.3'                                                                           |                                                                |                              |                                                                                                    |  |
|                                                                                                                              |            |                             | (SC) Olive, fine clayey SAND. Some silt.                                                         |                                                                | 1                            | 5                                                                                                  |  |
|                                                                                                                              |            |                             |                                                                                                  |                                                                |                              | 20                                                                                                 |  |
|                                                                                                                              | 50         |                             |                                                                                                  |                                                                | 2                            | 14                                                                                                 |  |
|                                                                                                                              |            |                             |                                                                                                  |                                                                |                              | 21                                                                                                 |  |
| -52.8'                                                                                                                       |            |                             |                                                                                                  |                                                                | 3                            | 18                                                                                                 |  |
|                                                                                                                              | 55         |                             | (SM) Olive, fine silty SAND. Some clay.                                                          |                                                                |                              | 16                                                                                                 |  |
|                                                                                                                              |            |                             |                                                                                                  |                                                                |                              | 17                                                                                                 |  |
|                                                                                                                              |            |                             |                                                                                                  |                                                                |                              | 24                                                                                                 |  |
|                                                                                                                              |            |                             |                                                                                                  |                                                                |                              | 17                                                                                                 |  |
| -60.3'                                                                                                                       | 60         |                             |                                                                                                  |                                                                | 4                            | 12                                                                                                 |  |
|                                                                                                                              |            |                             | Bottom of Boring 60.3'                                                                           |                                                                |                              | BLOWS PER FOOT:                                                                                    |  |
|                                                                                                                              |            |                             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                |                              | Number required to drive 1 3/4" I.D. splitspoon w/140 lb. hammer falling 30".                      |  |

Hole No. SH-343

| DRILLING LOG                                                                                                                 |       | ON SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                       |                         | SHEET 1 OF 1 SHEETS                                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                   |                                                                                                  | 10. SIZE AND TYPE OF BIT 5 1/2" fishtail, 4 x 5 1/2" carbide bit |                         |                                                                                                                                 |  |
| 2. LOCATION (Coordinates or Station)<br>X=915614 Y=742618 GA. EAST                                                           |       |                   |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                |                         |                                                                                                                                 |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                   |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314           |                         |                                                                                                                                 |  |
| 4. HOLE NO. (As shown on drawing title and file number) : SH-343                                                             |       |                   |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 0 : 0 : 3           |                         |                                                                                                                                 |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                   |                                                                                                  | 14. TOTAL NUMBER CORE BOXES 0                                    |                         |                                                                                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VER.: |       |                   |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                   |                         |                                                                                                                                 |  |
| 7. THICKNESS OF OVERBURDEN 78.3' (Water 43.3')                                                                               |       |                   |                                                                                                  | 16. DATE HOLE : STARTED 2 SEP 92 : COMPLETED 2 SEP 92            |                         |                                                                                                                                 |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                   |                                                                                                  | 17. ELEVATION TOP OF HOLE 0.0'                                   |                         |                                                                                                                                 |  |
| 9. TOTAL DEPTH OF HOLE 78.3'                                                                                                 |       |                   |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING x                             |                         |                                                                                                                                 |  |
|                                                                                                                              |       |                   |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                 |                         |                                                                                                                                 |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND            | CLASSIFICATION OF MATERIALS (Description)                                                        | % CORE RECOVERY                                                  | BOX OR SAMPLE NO. (JAR) | REMARKS (Drilling firm, water level, depth of weathering, etc., if applicable)                                                  |  |
| 0.0                                                                                                                          | 0.0   |                   |                                                                                                  |                                                                  |                         |                                                                                                                                 |  |
|                                                                                                                              | 40    |                   | Water                                                                                            |                                                                  |                         | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.3'.                                                           |  |
| -43.3'                                                                                                                       |       |                   | Bottom of Harbor 43.3'                                                                           |                                                                  |                         |                                                                                                                                 |  |
|                                                                                                                              | 50    |                   | Wash.                                                                                            |                                                                  |                         | Cleaned out from 43.3' to 48.3' with fishtail. Pushed 3" Shelby tube from 48.3' to 50.3'. Jar sample taken from bottom of tube. |  |
| -48.3'                                                                                                                       |       |                   | (SC) Gray coarse clayey SAND, some fine gravel                                                   |                                                                  | UD-1                    |                                                                                                                                 |  |
| -50.3'                                                                                                                       |       |                   | Wash.                                                                                            |                                                                  |                         | Cleaned out to 58.3'. Pushed 3" Shelby tube from 58.3' to 60.3'. Jar sample taken from bottom of tube.                          |  |
|                                                                                                                              | 60    |                   | (SC) Olive fine clayey SAND, some silt, calcareous.                                              |                                                                  | UD-2                    |                                                                                                                                 |  |
| -58.3'                                                                                                                       |       |                   | Wash.                                                                                            |                                                                  |                         | Cleaned out to 68.3'. Pushed 3" Shelby tube from 68.3' to 70.3'. Jar sample taken from bottom of tube.                          |  |
| -60.3'                                                                                                                       |       |                   | (SC) Dark olive gray to black fine to medium clayey SAND.                                        |                                                                  | UD-3                    |                                                                                                                                 |  |
| -68.3'                                                                                                                       |       |                   | Wash.                                                                                            |                                                                  |                         | Cleaned out to 78.3' to core, but barreling up in casing at 58.0'. Pulled tool and grouted hole.                                |  |
| -70.3'                                                                                                                       |       |                   |                                                                                                  |                                                                  |                         |                                                                                                                                 |  |
| -78.3'                                                                                                                       | 80    |                   | Bottom of Boring 78.3'                                                                           |                                                                  |                         |                                                                                                                                 |  |
|                                                                                                                              | 90    |                   | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                  |                         |                                                                                                                                 |  |



Hole No. SH-343A

| DRILLING LOG                                                                                                                |               | ON SOUTH ATLANTIC                                                                   |                                                                     | INSTALLATION SAVANNAH, GA.                             |                                | SHEET 1<br>OF 1 SHEETS                                                                                                    |  |
|-----------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                     |               |                                                                                     |                                                                     | 10. SIZE AND TYPE OF BIT 5 1/2" roller rock bit        |                                |                                                                                                                           |  |
| 2. LOCATION (Coordinates or Station)<br>X-915609 Y-742602 GA. EAST                                                          |               |                                                                                     |                                                                     | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW      |                                |                                                                                                                           |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                     |               |                                                                                     |                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314 |                                |                                                                                                                           |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-343A                                                          |               |                                                                                     |                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>0        |                                | DISTURBED<br>0                                                                                                            |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                         |               |                                                                                     |                                                                     | 14. TOTAL NUMBER CORE BOXES<br>1                       |                                | UNDISTURBED<br>0                                                                                                          |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCURED _____ DEG. FROM VERT. |               |                                                                                     |                                                                     | 15. ELEVATION GROUND WATER<br>N/A                      |                                |                                                                                                                           |  |
| 7. THICKNESS OF OVERBURDEN 82.0' (Water)                                                                                    |               |                                                                                     |                                                                     | 16. DATE HOLE<br>STARTED 3 SEP 92 COMPLETED 3 SEP 92   |                                |                                                                                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                             |               |                                                                                     |                                                                     | 17. ELEVATION TOP OF HOLE 0.0'                         |                                |                                                                                                                           |  |
| 9. TOTAL DEPTH OF HOLE 82.0'                                                                                                |               |                                                                                     |                                                                     | 18. TOTAL CORE RECOVERY FOR BORING 92 %                |                                |                                                                                                                           |  |
|                                                                                                                             |               |                                                                                     |                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.       |                                |                                                                                                                           |  |
| ELEVATION<br>0.0'                                                                                                           | DEPTH<br>0.0' | LEGEND<br>c                                                                         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                   | % CORE<br>RECOVERY<br>e                                | BOX OR<br>SAMPLE<br>NO.<br>VAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>f                                 |  |
|                                                                                                                             | 40            |                                                                                     | Water                                                               |                                                        |                                | Scale change at 40.0'.<br>Set 6" diameter casing by own<br>weight to 40.5'.                                               |  |
| -43.5'                                                                                                                      |               |                                                                                     | Bottom at Harbor 43.5'                                              |                                                        |                                |                                                                                                                           |  |
|                                                                                                                             | 50            |                                                                                     | Wash.                                                               |                                                        |                                |                                                                                                                           |  |
|                                                                                                                             | 60            |                                                                                     |                                                                     |                                                        |                                |                                                                                                                           |  |
|                                                                                                                             | 70            |                                                                                     |                                                                     |                                                        |                                |                                                                                                                           |  |
| -78.3'                                                                                                                      | 80            |  | (SC) Olive gray and black fine clayey SAND,<br>slightly calcareous. | 92%                                                    | Box<br>1                       | Pull-1<br>From 78.3', run 2.7' to 81.0' rec 2.5'<br>C. L. 0.2'<br>Waxed sample from 78.3' to 79.4' and<br>79.4' to 80.6'. |  |
| -80.8'                                                                                                                      |               |                                                                                     | Core loss.                                                          |                                                        |                                |                                                                                                                           |  |
| -81.0'                                                                                                                      |               |                                                                                     | No recovery, Shelby tube remained in hole.                          |                                                        |                                | Pushed 3" Shelby tube from 81.0' to<br>82.0'. Tube broke at 82.0'. Grouted hole.                                          |  |
| -82.0'                                                                                                                      | 82            |                                                                                     | Bottom of Boring 82.0'                                              |                                                        |                                |                                                                                                                           |  |
| NOTE: Soils visually field classified in<br>accordance with the Unified Soil Classification<br>System.                      |               |                                                                                     |                                                                     |                                                        |                                |                                                                                                                           |  |

Hole No. SH-345

| DRILLING LOG                                                                                                                 |             | DIRECTION<br>SOUTH ATLANTIC |                                                                                                  | INSTALLATION<br>SAVANNAH, GA.                                               |                                | SHEET 1<br>OF 1 SHEETS                                                                            |       |
|------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|-------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |             |                             |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL                |                                |                                                                                                   |       |
| 2. LOCATION (Coordinates or Station)<br>X-917219 Y-740840 GA. EAST                                                           |             |                             |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                           |                                |                                                                                                   |       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |             |                             |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 314                      |                                |                                                                                                   |       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-345                                                            |             |                             |                                                                                                  | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN<br>DISTURBED 7 UNDISTURBED 0 |                                |                                                                                                   |       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |             |                             |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                                            |                                |                                                                                                   |       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                             |                                                                                                  | 15. ELEVATION GROUND WATER N/A                                              |                                |                                                                                                   |       |
| 7. THICKNESS OF OVERBURDEN<br>61.0' (Water 41.5')                                                                            |             |                             |                                                                                                  | 16. DATE HOLE<br>STARTED 9 DEC 91 COMPLETED 9 DEC 91                        |                                |                                                                                                   |       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |             |                             |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                                           |                                |                                                                                                   |       |
| 9. TOTAL DEPTH OF HOLE<br>61.0'                                                                                              |             |                             |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A %                                 |                                |                                                                                                   |       |
|                                                                                                                              |             |                             |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                            |                                |                                                                                                   |       |
| ELEVATION<br>0.0'                                                                                                            | DEPTH<br>0' | LEGEND<br>c                 | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                | % CORE<br>RECOVER-<br>ERY<br>a                                              | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         | BLOWS |
|                                                                                                                              |             |                             | Water                                                                                            |                                                                             |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 46.4'.                             |       |
|                                                                                                                              | 40          |                             | Bottom of Harbor 41.5'                                                                           |                                                                             |                                |                                                                                                   |       |
| -41.5'                                                                                                                       |             |                             | (SC) Dark grey to black, fine to medium clayey SAND. Trace of small shell fragments.             |                                                                             | 1                              | Weight of rods drove split spoon from 41.5' to 44.4', cont'd. drive to 44.5' with one blow.       | 0     |
| -44.5'                                                                                                                       | 45          |                             | (SM) Dark grey, fine to medium, silty SAND. Trace of clay & small shell fragments.               |                                                                             | 2                              |                                                                                                   | 1     |
| -46.0'                                                                                                                       |             |                             | Medium to coarse sand.                                                                           |                                                                             |                                | Began using Zeogel drilling mud at 46.0'.                                                         | 17    |
| -47.5'                                                                                                                       |             |                             | Trace of fine gravel.                                                                            |                                                                             | 3                              |                                                                                                   | 21    |
| -49.0'                                                                                                                       | 50          |                             | (CH) Dark grey, fat CLAY. Trace of fine sand.                                                    |                                                                             | 4                              |                                                                                                   | 28    |
| -50.5'                                                                                                                       |             |                             | (SP) Fine, grey, poorly graded SAND. Trace of silt.                                              |                                                                             | 5                              |                                                                                                   | 5     |
| -53.5'                                                                                                                       | 55          |                             | (SM) Grey, medium to coarse silty SAND.                                                          |                                                                             | 6                              |                                                                                                   | 75    |
| -58.0'                                                                                                                       |             |                             | Same clay.                                                                                       |                                                                             |                                |                                                                                                   | 51    |
| -59.5'                                                                                                                       | 60          |                             | (CH) Dark grey, fat CLAY. Some medium to coarse sand in layers up to 0.2' thick.                 |                                                                             | 7                              |                                                                                                   | 28    |
| -61.0'                                                                                                                       |             |                             | Bottom of Boring 61.0'                                                                           |                                                                             |                                |                                                                                                   | 40    |
|                                                                                                                              |             |                             |                                                                                                  |                                                                             |                                |                                                                                                   | 39    |
|                                                                                                                              |             |                             |                                                                                                  |                                                                             |                                |                                                                                                   | 22    |
|                                                                                                                              |             |                             |                                                                                                  |                                                                             |                                |                                                                                                   | 14    |
|                                                                                                                              |             |                             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                                             |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |       |

Hole No. SH- 347

| DRILLING LOG                                                                                                                 |            | DIVISION       | INSTALLATION                                                                           |                                                                                               | SHEET                                                                   |                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor Deepening                                                                                      |            | South Atlantic | Savannah, Ga.                                                                          |                                                                                               | OF 1 SHEETS                                                             |                                                                                        |
| 2. LOCATION (Coordinates or Station)<br>UTM, X-517607.47, Y-3543282.92                                                       |            |                | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Splitspoon, MLW                                  |                                                                                               | 11. DATUM FOR ELEVATION SHOWN (TBM & BMS)<br>5 1/2" Fishtail            |                                                                                        |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling-314                                 |                                                                                               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 5 UNDISTURBED 0 |                                                                                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-347                                                            |            |                | 14. TOTAL NUMBER CORE BOXES<br>0                                                       |                                                                                               | 15. ELEVATION GROUND WATER<br>N/A                                       |                                                                                        |
| 5. NAME OF DRILLER<br>D. Justiss                                                                                             |            |                | 16. DATE HOLE<br>MAR 9 1992                                                            |                                                                                               | 17. ELEVATION TOP OF HOLE<br>0.0'                                       |                                                                                        |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                              |                                                                                               | 19. SIGNATURE OF INSPECTOR<br>P. J. ARTHUR                              |                                                                                        |
| 7. THICKNESS OF OVERBURDEN<br>59.8' (Water 40.3')                                                                            |            |                | 19. SIGNATURE OF INSPECTOR<br>P. J. ARTHUR                                             |                                                                                               |                                                                         |                                                                                        |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |                |                                                                                        |                                                                                               |                                                                         |                                                                                        |
| 9. TOTAL DEPTH OF HOLE<br>59.8'                                                                                              |            |                |                                                                                        |                                                                                               |                                                                         |                                                                                        |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                      | % CORE RECOVERY<br>e                                                                          | BOX OR SAMPLE NO.<br>f                                                  | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |
|                                                                                                                              |            |                | WATER                                                                                  |                                                                                               |                                                                         | SCALE CHANGE AT 40.0' SET 6" DIAMETER CASING BY OWN WEIGHT TO 41.8'                    |
| -42.3                                                                                                                        | 40         |                | BOTTOM OF BOREHOLE 40.3'                                                               |                                                                                               | DRAB                                                                    | BEGAN USING ZEEGEL DRILLING DRILLING MUD AT 41.8'                                      |
| -43.3                                                                                                                        |            |                | (SM) DARK GRAY FINE SILTY SAND, TRACE OF SMALL SHELL FRAGMENTS.                        |                                                                                               | 1                                                                       |                                                                                        |
| -44.6                                                                                                                        |            |                | (SD) LIGHT GRAY FINE TO MEDIUM POORLY GRADED SAND, TRACE OF SILT.                      |                                                                                               | 2                                                                       |                                                                                        |
| -46.2                                                                                                                        | 45         |                | TRACE OF SMALL SHELL FRAGMENTS.                                                        |                                                                                               | 3                                                                       |                                                                                        |
|                                                                                                                              |            |                | MEDIUM TO COARSE SAND                                                                  |                                                                                               |                                                                         |                                                                                        |
|                                                                                                                              | 50         |                |                                                                                        |                                                                                               |                                                                         |                                                                                        |
| -52.3                                                                                                                        |            |                | GRAY, TRACE OF FINE GRAVEL AND CLAY.                                                   |                                                                                               | 4                                                                       |                                                                                        |
| -53.8                                                                                                                        |            |                | LARGE AMOUNT OF DECAYED WOOD PARTICLES.                                                |                                                                                               |                                                                         |                                                                                        |
| -55.3                                                                                                                        | 55         |                | LIGHT GRAY COARSE POORLY GRADED SAND, TRACE OF SILT.                                   |                                                                                               |                                                                         |                                                                                        |
| -56.8                                                                                                                        |            |                | GRAY, SOME FINE GRAVEL, LARGE AMOUNT OF DECAYED WOOD PARTICLES, TRACE OF CLAY.         |                                                                                               |                                                                         |                                                                                        |
| -58.3                                                                                                                        |            |                | (SC) DARK GRAY COARSE CLAYEY SAND, LARGE AMOUNT OF SMALL SHELL FRAGMENTS.              |                                                                                               | 5                                                                       |                                                                                        |
| -59.7                                                                                                                        | 60         |                | OLIVE GRAY FINE CLAYEY SAND, NO SHELL FRAGMENTS.                                       |                                                                                               |                                                                         |                                                                                        |
| -59.8                                                                                                                        |            |                | BOTTOM OF BORING 59.8'                                                                 |                                                                                               |                                                                         |                                                                                        |
|                                                                                                                              |            |                | NOTE: Soils field classified in accordance with the Unified Soil Classification System | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb hammer falling 30". |                                                                         |                                                                                        |

Hole No. SH-350

| DRILLING LOG                                                                                                                 |              | ON SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                 |                                | SHEET 1 OF 1 SHEETS                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|--|
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                         |              |                   |                                                                                                  | 10. SIZE AND TYPE OF BIT 1 3/4" SPLIT SPOON, 5/2" FISHTAIL |                                |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station) X-920912 Y-737502 GA. EAST                                                              |              |                   |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW             |                                |                                                                                                   |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                         |              |                   |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314        |                                |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-350                                                               |              |                   |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                 |                                | DISTURBED 5 UNDISTURBED 0                                                                         |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                             |              |                   |                                                                                                  | 14. TOTAL NUMBER CORE BOXES                                |                                | 0                                                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                   |                                                                                                  | 15. ELEVATION GROUND WATER                                 |                                | N/A                                                                                               |  |
| 7. THICKNESS OF OVERBURDEN 59.9' (Water 41.9')                                                                               |              |                   |                                                                                                  | 16. DATE HOLE                                              |                                | STARTED 13 DEC 91 COMPLETED 13 DEC 91                                                             |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |              |                   |                                                                                                  | 17. ELEVATION TOP OF HOLE                                  |                                | 0.0'                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 59.9'                                                                                                 |              |                   |                                                                                                  | 18. TOTAL CORE RECOVERY FOR BORING                         |                                | N/A                                                                                               |  |
|                                                                                                                              |              |                   |                                                                                                  | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P. G.             |                                |                                                                                                   |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c       | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                               | BOX OR<br>SAMPLE<br>NO.<br>UAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         |  |
|                                                                                                                              |              |                   | Water                                                                                            |                                                            |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 45.7'.                             |  |
|                                                                                                                              | 40           |                   | Bottom of Harbor 41.9'                                                                           |                                                            |                                |                                                                                                   |  |
| -41.9'                                                                                                                       |              |                   | (SM) Dark grey, fine to medium, silty SAND.<br>Trace of clay & small shell fragments.            |                                                            | 1                              | 19                                                                                                |  |
| -43.4'                                                                                                                       |              |                   | Fine to medium, trace of clay.                                                                   |                                                            |                                | 8                                                                                                 |  |
|                                                                                                                              | 45           |                   | (SC) Dark grey, fine to medium clayey SAND.<br>Some small shell fragments.                       |                                                            | 2                              | 14                                                                                                |  |
| -46.0'                                                                                                                       |              |                   | Grey.                                                                                            |                                                            |                                | 20                                                                                                |  |
| -47.9'                                                                                                                       |              |                   |                                                                                                  |                                                            |                                | 23                                                                                                |  |
|                                                                                                                              | 50           |                   |                                                                                                  |                                                            | 3                              | 20                                                                                                |  |
|                                                                                                                              |              |                   |                                                                                                  |                                                            |                                | 14                                                                                                |  |
| -53.9'                                                                                                                       |              |                   | (SM) Grey, fine to medium silty SAND.<br>Some shell fragments, trace of clay.                    |                                                            | 4                              | 25                                                                                                |  |
| -55.4'                                                                                                                       |              |                   | Medium to coarse sand.                                                                           |                                                            |                                | 38                                                                                                |  |
|                                                                                                                              | 55           |                   |                                                                                                  |                                                            |                                | 36                                                                                                |  |
| -58.4'                                                                                                                       |              |                   | (SC) Olive-grey, fine clayey SAND.<br>Trace of shell fragments.                                  |                                                            | 5                              | 23                                                                                                |  |
| -59.9'                                                                                                                       |              |                   |                                                                                                  |                                                            |                                | 19                                                                                                |  |
|                                                                                                                              | 60           |                   | Bottom of Boring 59.9'                                                                           |                                                            |                                |                                                                                                   |  |
|                                                                                                                              |              |                   | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                            |                                | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. split spoon w/140 lb. hammer falling 30". |  |

| DRILLING LOG                                                                                                                 |            |             | DIVISION                                                                                                 |                         | INSTALLATION                                           |                                                                                        | Hole No. <u>SH-353</u>                     |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|----------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------|--|
| 1. PROJECT<br><u>SAVANNAH HARBOR DEEPENING</u>                                                                               |            |             | <u>SOUTH ATLANTIC</u>                                                                                    |                         | <u>SAVANNAH, GA</u>                                    |                                                                                        | SHEET <u>1</u><br>OF <u>1</u> SHEETS       |  |
| 2. LOCATION (Coordinates or Station)<br><u>X-518637.86 Y-3541812.31</u>                                                      |            |             |                                                                                                          |                         | 10. SIZE AND TYPE OF BIT <u>1 3/8" ID SPLIT S POOL</u> |                                                                                        | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) |  |
| 3. DRILLING AGENCY<br><u>SAVANNAH DISTRICT</u>                                                                               |            |             |                                                                                                          |                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>MLW</u>  |                                                                                        |                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br><u>SH-353</u>                                                     |            |             |                                                                                                          |                         | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN             |                                                                                        | 14. TOTAL NUMBER CORE BOXES                |  |
| 5. NAME OF DRILLER<br><u>DAVID JUSTISS</u>                                                                                   |            |             |                                                                                                          |                         | 15. ELEVATION GROUND WATER                             |                                                                                        | 16. DATE HOLE                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             |                                                                                                          |                         | 17. ELEVATION TOP OF HOLE                              |                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING         |  |
| 7. THICKNESS OF OVERBURDEN<br><u>40.8'</u>                                                                                   |            |             |                                                                                                          |                         | 19. SIGNATURE OF INSPECTOR <u>Michael Bailey</u>       |                                                                                        | 19. SIGNATURE OF INSPECTOR                 |  |
| 8. DEPTH DRILLED INTO ROCK<br><u>0.0'</u>                                                                                    |            |             |                                                                                                          |                         |                                                        |                                                                                        |                                            |  |
| 9. TOTAL DEPTH OF HOLE<br><u>40.8'</u>                                                                                       |            |             |                                                                                                          |                         |                                                        |                                                                                        |                                            |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                        | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f                           | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |                                            |  |
|                                                                                                                              |            |             | WATER                                                                                                    |                         |                                                        | SCALE CHANGE AT 40.0'                                                                  |                                            |  |
| 40                                                                                                                           |            |             | BOTTOM OF HARBOR 41.5'                                                                                   |                         | JAR                                                    | CLOWS                                                                                  |                                            |  |
|                                                                                                                              |            |             | (SM) DARK TO VERY DARK GRAY FINE GRAINED SILTY SAND TRACE CLAY AND MKA; 0.1' DARK GRAY FAT CLAY AT 41.3' |                         | 1                                                      | 20                                                                                     |                                            |  |
| 45                                                                                                                           |            |             | (CH) DARK GRAY FAT CLAY SOME SAND VERY SOFT AND WET                                                      |                         | 2                                                      | 20                                                                                     |                                            |  |
|                                                                                                                              |            |             | (SM) DARK GRAY FINE TO MEDIUM GRAINED SILTY SAND TRACE CLAY AND SHELL FRAG.                              |                         | 3                                                      | 5                                                                                      |                                            |  |
|                                                                                                                              |            |             | SOME SHELL FRAGMENTS AND CLAY                                                                            |                         |                                                        | 13                                                                                     |                                            |  |
| 50                                                                                                                           |            |             |                                                                                                          |                         | 4                                                      | 28                                                                                     |                                            |  |
|                                                                                                                              |            |             | GRAY FINE TO MEDIUM GRAINED SILTY SHELLY SAND SOME FINE TO MEDIUM GRAINED GRAVEL                         |                         | 5                                                      | 13                                                                                     |                                            |  |
| 55                                                                                                                           |            |             | (CH) DARK GRAY FAT CLAY SOME SILT, SAND AND SHELL                                                        |                         | 6                                                      | 14                                                                                     |                                            |  |
|                                                                                                                              |            |             | (SM) GRAY TO DARK GRAY FINE TO MEDIUM SILTY SAND SOME SHELL FRAGMENTS TRACE CLAY                         |                         | 7                                                      | 10                                                                                     |                                            |  |
|                                                                                                                              |            |             |                                                                                                          |                         |                                                        | 22                                                                                     |                                            |  |
| 60                                                                                                                           |            |             | DARK GRAY                                                                                                |                         | 8                                                      | 34                                                                                     |                                            |  |
|                                                                                                                              |            |             | BOTTOM OF HOLE 60.8'                                                                                     |                         |                                                        | 22                                                                                     |                                            |  |
| 65                                                                                                                           |            |             |                                                                                                          |                         |                                                        | 27                                                                                     |                                            |  |
|                                                                                                                              |            |             | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                 |                         |                                                        | Number <u>1 3/8" ID</u><br>hammer falling <u>20</u>                                    |                                            |  |

Hole No. SH-355

| DRILLING LOG                                                                                         |       | DIVISION                  | INSTALLATION                                                                    |                                                                                         | SHEET             |                                                                                                                                            |
|------------------------------------------------------------------------------------------------------|-------|---------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT                                                                                              |       | South Atlantic            | Savannah, Ga.                                                                   |                                                                                         | OF 1 SHEETS       |                                                                                                                                            |
| LOCATION (Continuation of Station)                                                                   |       | Savannah Harbor Deepening |                                                                                 | 10. SIZE AND TYPE OF BIT 3/8" ID Spitspoon                                              |                   |                                                                                                                                            |
| UTM X-518940.20, Y-3541275.46                                                                        |       |                           |                                                                                 | 11. DAYUM FOR ELEVATION SHOWN (FROM 2 1/2')                                             |                   |                                                                                                                                            |
| DRILLING AGENCY Savannah District                                                                    |       |                           |                                                                                 | MLW 5 1/2" Fishtail                                                                     |                   |                                                                                                                                            |
| HOLE NO. (As shown on drawing title and file number) SH-355                                          |       |                           |                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                 |                   |                                                                                                                                            |
| NAME OF DRILLER D. Justiss                                                                           |       |                           |                                                                                 | Falling 314                                                                             |                   |                                                                                                                                            |
| DIRECTION OF HOLE                                                                                    |       |                           |                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                              |                   |                                                                                                                                            |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                           |                                                                                 | DISTURBED 6 UNDISTURBED 0                                                               |                   |                                                                                                                                            |
| THICKNESS OF OVERBURDEN 60.6' (Water 41.6')                                                          |       |                           |                                                                                 | 14. TOTAL NUMBER CORE BOXES                                                             |                   | 0                                                                                                                                          |
| DEPTH DRILLED INTO ROCK 0.0'                                                                         |       |                           |                                                                                 | 15. ELEVATION GROUND WATER                                                              |                   | N/A                                                                                                                                        |
| TOTAL DEPTH OF HOLE 60.6'                                                                            |       |                           |                                                                                 | 16. DATE HOLE                                                                           |                   |                                                                                                                                            |
|                                                                                                      |       |                           |                                                                                 | STARTED MAR 8 1992 COMPLETED MAR 8 1992                                                 |                   |                                                                                                                                            |
|                                                                                                      |       |                           |                                                                                 | 17. ELEVATION TOP OF HOLE                                                               |                   | 0.0'                                                                                                                                       |
|                                                                                                      |       |                           |                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING                                                      |                   | 1/A                                                                                                                                        |
|                                                                                                      |       |                           |                                                                                 | 19. SIGNATURE OF INSPECTOR                                                              |                   | J. ARTHUR                                                                                                                                  |
| ELEVATION                                                                                            | DEPTH | LEGEND                    | CLASSIFICATION OF MATERIALS (Description)                                       | % CORE RECOVERY                                                                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                             |
|                                                                                                      | 0     |                           | WATER                                                                           |                                                                                         |                   | SCALE CHANGE AT 40.0'. SET 6" DIAMETER CASING BY OWN WEIGHT TO 44.7'. RE-SET CASING TO 47.2'. BEGAN USING ZEEGL. DRILLING MUD AT 41.6'.    |
| -41.6'                                                                                               | 40    |                           | BOTTOM OF HANGING 41.6'                                                         |                                                                                         | 27MS              | BURNS                                                                                                                                      |
| -44.1'                                                                                               |       |                           | (SC) DARK GRAY FINE CLAYEY SAND, SOME SMALL SHELL FRAGMENTS & SILT.             |                                                                                         | 1                 | WEIGHT OF RUDD ABOVE SPITSPOON FROM 41.6' TO 44.1'.                                                                                        |
| -45.6'                                                                                               | 45    |                           | (SM) GRAY FINE TO MEDIUM SILTY SAND, SOME SMALL SHELL FRAGMENTS, TRACE OF CLAY. |                                                                                         | 2                 | NO SPITSPOON RECOVERY ON FIRST DRIVE FROM 48.6' TO 50.1'. RE-DRIVE TO 50.1' THEN CONT'D DRIVE TO 51.6'. JAW SAMPLE #3 FROM 48.6' TO 51.6'. |
| -47.1'                                                                                               |       |                           | NO CLAY OR SHELL FRAGMENTS, LIGHT GRAY.                                         |                                                                                         |                   |                                                                                                                                            |
| -48.6'                                                                                               | 50    |                           | GRAY, LARGE AMOUNT OF SMALL SHELL FRAGMENTS, TRACE OF CLAY.                     |                                                                                         | 3                 |                                                                                                                                            |
| -51.6'                                                                                               |       |                           | (SC) GRAY FINE TO MEDIUM CLAYEY SAND, TRACE OF SMALL SHELL FRAGMENTS.           |                                                                                         | 4                 |                                                                                                                                            |
| -53.1'                                                                                               |       |                           | (SP) LIGHT GRAY FINE POOLY GRADED SAND, TRACE OF SILT.                          |                                                                                         | 5                 |                                                                                                                                            |
| -54.6'                                                                                               | 55    |                           | GRAY.                                                                           |                                                                                         |                   |                                                                                                                                            |
| -56.1'                                                                                               |       |                           | LIGHT GRAY.                                                                     |                                                                                         |                   |                                                                                                                                            |
| -60.6'                                                                                               | 60    |                           | BOTTOM OF BORING 60.6'                                                          |                                                                                         | 6                 |                                                                                                                                            |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System               |       |                           |                                                                                 | BLOWS PER FOOT: Number required to drive 3/8" ID spitspoon w/140 lb hammer falling 30". |                   |                                                                                                                                            |

Hole No. SH-357

| DRILLING LOG                                                                                                                 |            | DIVISION      |                                                                                               | INSTALLATION                                                                           |                        | SHEET                                                                                                                                                                                                                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|---------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| South Atlantic                                                                                                               |            | Savannah, Ga. |                                                                                               | Savannah, Ga.                                                                          |                        | 1 OF 1 SHEETS                                                                                                                                                                                                                                                                                     |  |
| 1. PROJECT<br>Savannah Harbor Deepening                                                                                      |            |               |                                                                                               | 10. SIZE AND TYPE OF BIT 1 3/8" I.D. Splitspoon                                        |                        |                                                                                                                                                                                                                                                                                                   |  |
| 2. LOCATION (Coordinates or Station)<br>LTM, X-519450.26, Y-3540915.24                                                       |            |               |                                                                                               | 11. DAYUM FOR ELEVATION SHOWN (TBM or BBL)<br>MLW 5 1/2" Fishtail                      |                        |                                                                                                                                                                                                                                                                                                   |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |               |                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling-314                                 |                        |                                                                                                                                                                                                                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-357                                                            |            |               |                                                                                               | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                             |                        | DISTURBED 7 UNDISTURBED 0                                                                                                                                                                                                                                                                         |  |
| 5. NAME OF DRILLER<br>D. Justiss                                                                                             |            |               |                                                                                               | 14. TOTAL NUMBER CORE BOXES 0                                                          |                        |                                                                                                                                                                                                                                                                                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |               |                                                                                               | 15. ELEVATION GROUND WATER N/A                                                         |                        |                                                                                                                                                                                                                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 597' (Water, 322')                                                                                |            |               |                                                                                               | 16. DATE HOLE STARTED FEB 26 1992 COMPLETED FEB 26 1992                                |                        |                                                                                                                                                                                                                                                                                                   |  |
| 8. DEPTH DRILLED INTO ROCK 0.0                                                                                               |            |               |                                                                                               | 17. ELEVATION TOP OF HOLE 0.0'                                                         |                        |                                                                                                                                                                                                                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 597'                                                                                                  |            |               |                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                 |                        |                                                                                                                                                                                                                                                                                                   |  |
|                                                                                                                              |            |               |                                                                                               | 19. SIGNATURE OF INSPECTOR J. ARTHUR                                                   |                        |                                                                                                                                                                                                                                                                                                   |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c   | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                             | % CORE RECOVERY<br>e                                                                   | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g                                                                                                                                                                                                            |  |
|                                                                                                                              | 35         |               | WATER                                                                                         |                                                                                        |                        | SCALE CHANGE AT 35.0'. SET 6" DIAMETER CASING BY OWN, WRIGHT TO 40.2'. ADVANCED CASING TO BOTTOM OF MOST DRIVES DURING CLEANOUT. BLOWS                                                                                                                                                            |  |
| -37.2'                                                                                                                       |            |               | BOTTOM OF HARBOR 37.2'                                                                        |                                                                                        | JMS                    |                                                                                                                                                                                                                                                                                                   |  |
| -40.2'                                                                                                                       | 40         |               | (SP) LIGHT GRAY FINE POORLY GRADED SAND, TRACE OF SILT.                                       |                                                                                        | 1                      | NO SPLITSPOON RECOVERY ON FIRST ATTEMPT FROM 37.2' TO 38.7'. RE-DRIVE TO 38.7' THEN CONT'D DRIVE TO 40.2'. SAMPLES FROM 37.2' TO 40.2'.                                                                                                                                                           |  |
|                                                                                                                              |            |               | LIGHT BROWNISH GRAY, TRACE OF CLAY.                                                           |                                                                                        | 2                      | NO SPLITSPOON RECOVERY ON FIRST ATTEMPT FROM 40.2' TO 41.7'. RE-DRIVE TO 41.7' THEN CONT'D DRIVE TO 43.2' BUT ENCOUNTERED SOFT ZONE AND SPLITSPOON CONT'D TO 43.5'. CONT'D WITH DRIVE TO 44.7' BUT SAMPLE RECOVERY FROM 40.2' TO 44.7' WAS POOR. WASH RETURN CONTAINED FINE SAND & TRACE OF CLAY. |  |
| -44.7'                                                                                                                       | 45         |               | (SC) VERY DARK GRAY TO BLACK FINE CLAYEY SAND.                                                |                                                                                        | 3                      |                                                                                                                                                                                                                                                                                                   |  |
| -49.2'                                                                                                                       | 50         |               | (MH) VERY DARK GRAY TO BLACK CLAYEY SILT, SOME FINE SAND.                                     |                                                                                        | 4                      |                                                                                                                                                                                                                                                                                                   |  |
| -50.7'                                                                                                                       |            |               | (SH) LIGHT GRAY FINE TO COARSE SILTY SAND, TRACE OF CLAY, FINE GRAVEL & SMALL SHAL FRAGMENTS. |                                                                                        | 5                      |                                                                                                                                                                                                                                                                                                   |  |
| -52.2'                                                                                                                       |            |               | MEDIUM TO COARSE SAND.                                                                        |                                                                                        |                        |                                                                                                                                                                                                                                                                                                   |  |
| -53.7'                                                                                                                       | 55         |               | FINE TO MEDIUM SAND.                                                                          |                                                                                        |                        |                                                                                                                                                                                                                                                                                                   |  |
| -56.7'                                                                                                                       |            |               | (SP) GRAY FINE TO MEDIUM POORLY GRADED SAND, TRACE OF SILT.                                   |                                                                                        | 6                      |                                                                                                                                                                                                                                                                                                   |  |
| -59.7'                                                                                                                       | 60         |               | BOTTOM OF BORING 59.7'                                                                        |                                                                                        | 7                      |                                                                                                                                                                                                                                                                                                   |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System                                       |            |               |                                                                                               | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb falling 30". |                        |                                                                                                                                                                                                                                                                                                   |  |

Hole No. SH-363

| DRILLING LOG                                                                                                                 |            | DIV' South Atlantic | INSTALLATION Savannah, Ga.                                                                          |                               | SHEET 1 OF 1 SHEETS          |                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------|------------|---------------------|-----------------------------------------------------------------------------------------------------|-------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT Savannah Harbor Deepening                                                                                         |            |                     | 10. SIZE AND TYPE OF BIT 1 3/8" ID. Spitspoon                                                       |                               |                              |                                                                                                                             |
| 2. LOCATION (Coordinates or Station) WITH X-519983.93, Y-3540168.91                                                          |            |                     | 11. DAYUM FOR ELEVATION SHOWN (TBM & BBL) M.W. 5 1/2" Fishtail                                      |                               |                              |                                                                                                                             |
| 3. DRILLING AGENCY Savannah District                                                                                         |            |                     | 12. MANUFACTURER'S DESIGNATION OF DRILL Falling-314                                                 |                               |                              |                                                                                                                             |
| 4. HOLE NO. (As shown on drawing title and file number) SH-360                                                               |            |                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 5 UNDISTURBED 0                                |                               |                              |                                                                                                                             |
| 5. NAME OF DRILLER D. Justiss                                                                                                |            |                     | 14. TOTAL NUMBER CORE BOXES 0                                                                       |                               |                              |                                                                                                                             |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                     | 15. ELEVATION GROUND WATER N/A                                                                      |                               |                              |                                                                                                                             |
| 7. THICKNESS OF OVERBURDEN 60.9' (Water 42.9')                                                                               |            |                     | 16. DATE HOLE STARTED MAR 8 1992 COMPLETED MAR 8 1992                                               |                               |                              |                                                                                                                             |
| 8. DEPTH DRILLED INTO ROCK 0.0                                                                                               |            |                     | 17. ELEVATION TOP OF HOLE 0.0                                                                       |                               |                              |                                                                                                                             |
| 9. TOTAL DEPTH OF HOLE 60.9'                                                                                                 |            |                     | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                              |                               |                              |                                                                                                                             |
|                                                                                                                              |            |                     | 19. SIGNATURE OF INSPECTOR J. C. J. ARTHUR                                                          |                               |                              |                                                                                                                             |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c         | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                   | SCORE<br>RECOVER-<br>ERY<br>e | BOX OF<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                   |
|                                                                                                                              | 40         |                     | WATER                                                                                               |                               |                              | SCALE CHANGE AT 40.0'<br>SET 6" DIAMETER<br>CASING BY OWN WEIGHT<br>TO 45.1'<br>BEGAN USING ZEOGEL<br>DAILLING MUD AT 42.9' |
| -42.9'                                                                                                                       |            |                     | CUTTING OF HARDEN 42.9'                                                                             |                               | DRS                          | Blue                                                                                                                        |
| -45.5'                                                                                                                       | 45         |                     | (SM) VERY DARK GRAY TO BLACK<br>FINE SILTY SAND.                                                    |                               | 1                            | WEIGHT OF HAMMER<br>DRIVE SPLITSPOON FROM<br>42.9' TO 45.9'                                                                 |
| -47.4'                                                                                                                       |            |                     | LIGHT GRAY TO GRAY FINE<br>TO MEDIUM SAND, SOME<br>SMALL SHELL FRAGMENTS,<br>TRACE OF FINE GRAVEL.  |                               | 2                            | MADE FRESH BATCH<br>OF ZEOGEL DAILLING<br>MUD AT 47.4'                                                                      |
| -50                                                                                                                          | 50         |                     | (SC) GRAY FINE CLAYEY SAND,<br>SOME SILT, TRACE OF SMALL<br>SHELL FRAGMENTS.                        |                               | 3                            |                                                                                                                             |
|                                                                                                                              |            |                     | (CH) GRAY FAT CLAY.                                                                                 |                               | 4                            |                                                                                                                             |
| -56.3'                                                                                                                       | 55         |                     | TRACE OF SMALL SHELL<br>FRAGMENTS & FINE SAND.<br>NO SHELL FRAGMENTS OR<br>SAND.                    |                               | 5                            |                                                                                                                             |
| -60.3'                                                                                                                       | 60         |                     | BOTTOM OF BORING 60.9'                                                                              |                               |                              |                                                                                                                             |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification System                                 |            |                     | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/140 lb<br>hammer falling 30". |                               |                              |                                                                                                                             |



Hole No. SH 425

| DRILLING LOG                                                                                                                 |            | DIVISION<br>SOUTH ATLANTIC |                                                                                                   | INSTALLATION<br>SAVANNAH, GA                            |                | SHEET 1<br>OF 1 SHEETS                                                         |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------|--------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR                                                                                                |            |                            |                                                                                                   | 10. SIZE AND TYPE OF BIT 5/2" FISHTAIL                  |                |                                                                                |  |
| 2. LOCATION (Coordinates or Station)<br>GA X-1067890.07, Y-743670.07                                                         |            |                            |                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW       |                |                                                                                |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                            |                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500 |                |                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 425                                                            |            |                            |                                                                                                   | 13. TOTAL NO. OF SOIL SAMPLES TAKEN                     |                | DISTURBED 9 UNDISTURBED 0                                                      |  |
| 5. NAME OF DRILLER<br>W. HERMAN                                                                                              |            |                            |                                                                                                   | 14. TOTAL NUMBER CORE BOXES                             |                | NONE                                                                           |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                   | 15. GROUND WATER ELEVATION                              |                | N/A                                                                            |  |
| 7. THICKNESS OF OVERBURDEN >60.2' MLW                                                                                        |            |                            |                                                                                                   | 16. DATE HOLE                                           |                | STARTED 2 APR 2002 COMPLETED 2 APR 2002                                        |  |
| 8. DEPTH DRILLED INTO ROCK -                                                                                                 |            |                            |                                                                                                   | 17. ELEVATION TOP OF HOLE                               |                | -46.7' (HARBOR FLOOR)                                                          |  |
| 9. TOTAL DEPTH OF HOLE 60.2' MLW                                                                                             |            |                            |                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING                      |                | NONE %                                                                         |  |
|                                                                                                                              |            |                            |                                                                                                   | 19. SIGNATURE OF INSPECTOR<br>DANA POLACSEK             |                |                                                                                |  |
| ELEVATION (FT)                                                                                                               | DEPTH (FT) | SYMBOLS                    | CLASSIFICATION OF MATERIALS (Description)                                                         | PERCENT MOISTURE CONTENT                                | JAR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 0.0'                                                                                                                         | 0          |                            |                                                                                                   |                                                         |                | BLOWS/FT.                                                                      |  |
|                                                                                                                              |            |                            | Water.                                                                                            |                                                         |                | Change of scale at 45'.                                                        |  |
|                                                                                                                              |            |                            | BOTTOM OF ENTRANCE CHANNEL                                                                        |                                                         |                | Set 67' of casing to a depth of 51.5'.                                         |  |
|                                                                                                                              | 45         |                            | (SM) Dark gray silty fine SAND with approximately 15% shell fragments.                            |                                                         |                | Elevation of bottom of harbor is 46.7'.                                        |  |
|                                                                                                                              |            |                            | (ML) Green SILT with little fine sand and approximately 5% black, rounded, oblong rock fragments. |                                                         | 1              | 0                                                                              |  |
|                                                                                                                              |            |                            | Decreasing rock fragments.                                                                        |                                                         | 2              | 20                                                                             |  |
|                                                                                                                              | 50         |                            | Trace fine sand and clay, moist.                                                                  |                                                         | 3              | 66                                                                             |  |
|                                                                                                                              |            |                            | 5% rock fragments, trace to little sand (fine).                                                   |                                                         | 4              | 20                                                                             |  |
|                                                                                                                              |            |                            | Increasing fine sand to some sand, decreasing clay.                                               |                                                         | 5              | 28                                                                             |  |
|                                                                                                                              |            |                            | Fine sandy silt with trace clay, increasing rock fragments to approximately 10%, wet.             |                                                         | 6              | 21                                                                             |  |
|                                                                                                                              | 55         |                            | Increasing rock fragments to 15% with trace quartz (rounded), may be silty sand, decreasing clay. |                                                         | 7              | 28                                                                             |  |
|                                                                                                                              |            |                            | (CL) Gray CLAY with some silt, with zones of sandy silt.                                          |                                                         | 8              | 26                                                                             |  |
|                                                                                                                              | 60         |                            | (ML/OL) Dark gray organic/inorganic SILT with little fine sand, moist.                            |                                                         |                | 30                                                                             |  |
|                                                                                                                              |            |                            | BOTTOM OF BORING: 60.2'                                                                           |                                                         |                |                                                                                |  |
|                                                                                                                              | 65         |                            |                                                                                                   |                                                         |                |                                                                                |  |
|                                                                                                                              | 70         |                            |                                                                                                   |                                                         |                |                                                                                |  |
|                                                                                                                              | 75         |                            |                                                                                                   |                                                         |                |                                                                                |  |
|                                                                                                                              | 80         |                            |                                                                                                   |                                                         |                |                                                                                |  |

NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO DRIVE 1 3/8" I. D. SPLITSPOON W/140 LB. HAMMER FALLING 30".

Hole No. SH426

| DRILLING LOG                                            |  | DIVISION                                                                                             | INSTALLATION                               |  | SHEET                                               |  |
|---------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|--------------------------------------------|--|-----------------------------------------------------|--|
| 1. PROJECT                                              |  | <u>SOUTH ATLANTIC</u>                                                                                | <u>SAVANNAH, GA</u>                        |  | OF <u>1</u> SHEETS                                  |  |
| 2. LOCATION (Coordinates or Station)                    |  | <u>SAVANNAH HARBOR</u>                                                                               | 10. SIZE AND TYPE OF BIT                   |  | <u>5 1/2" FISH TAIL</u>                             |  |
| 3. DRILLING AGENCY                                      |  | <u>SAVANNAH DISTRICT</u>                                                                             | 11. DATUM FOR ELEVATION SHOWN (FSM or MSL) |  | <u>MLW</u>                                          |  |
| 4. HOLE NO. (As shown on drawing title and file number) |  | <u>SH426</u>                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL    |  | <u>FAIRING 1500</u>                                 |  |
| 5. NAME OF DRILLER                                      |  | <u>H. FOLCHER</u>                                                                                    | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN  |  | <u>13</u>                                           |  |
| 6. DIRECTION OF HOLE                                    |  | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. | 14. TOTAL NUMBER CORE BOXES                |  | <u>-</u>                                            |  |
| 7. THICKNESS OF OVERBURDEN                              |  | <u>&gt; 65.8'</u>                                                                                    | 15. ELEVATION GROUND WATER                 |  | <u>-</u>                                            |  |
| 8. DEPTH DRILLED INTO ROCK                              |  | <u>-</u>                                                                                             | 16. DATE HOLE                              |  | STARTED <u>10 APR 62</u> COMPLETED <u>10 APR 62</u> |  |
| 9. TOTAL DEPTH OF HOLE                                  |  | <u>65.8'</u>                                                                                         | 17. ELEVATION TOP OF HOLE                  |  | <u>46.5' (Bottom Harbor)</u>                        |  |
|                                                         |  |                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING         |  | <u>-</u>                                            |  |
|                                                         |  |                                                                                                      | 19. SIGNATURE OF INSPECTOR                 |  | <u>S. J. B. L. K.</u>                               |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|-----------|-------|--------|-------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| a         | b     | c      | d                                         | e               | f                 | g                                                                              |
|           | 0     |        | WATER                                     |                 |                   |                                                                                |
|           | 10    |        |                                           |                 | 1                 |                                                                                |
|           | 20    |        |                                           |                 | 2                 |                                                                                |
|           | 30    |        |                                           |                 | 3                 |                                                                                |
|           | 40    |        |                                           |                 | 4                 |                                                                                |
|           | 50    |        |                                           |                 | 5                 |                                                                                |
|           | 60    |        |                                           |                 | 6                 |                                                                                |
|           | 70    |        |                                           |                 | 7                 |                                                                                |
|           | 80    |        |                                           |                 | 8                 |                                                                                |
|           | 90    |        |                                           |                 | 9                 |                                                                                |
|           | 100   |        |                                           |                 | 10                |                                                                                |
|           | 110   |        |                                           |                 | 11                |                                                                                |
|           | 120   |        |                                           |                 | 12                |                                                                                |
|           | 130   |        |                                           |                 | 13                |                                                                                |
|           | 140   |        |                                           |                 | 14                |                                                                                |
|           | 150   |        |                                           |                 | 15                |                                                                                |
|           | 160   |        |                                           |                 | 16                |                                                                                |
|           | 170   |        |                                           |                 | 17                |                                                                                |
|           | 180   |        |                                           |                 | 18                |                                                                                |
|           | 190   |        |                                           |                 | 19                |                                                                                |
|           | 200   |        |                                           |                 | 20                |                                                                                |
|           | 210   |        |                                           |                 | 21                |                                                                                |
|           | 220   |        |                                           |                 | 22                |                                                                                |
|           | 230   |        |                                           |                 | 23                |                                                                                |
|           | 240   |        |                                           |                 | 24                |                                                                                |
|           | 250   |        |                                           |                 | 25                |                                                                                |
|           | 260   |        |                                           |                 | 26                |                                                                                |
|           | 270   |        |                                           |                 | 27                |                                                                                |
|           | 280   |        |                                           |                 | 28                |                                                                                |
|           | 290   |        |                                           |                 | 29                |                                                                                |
|           | 300   |        |                                           |                 | 30                |                                                                                |
|           | 310   |        |                                           |                 | 31                |                                                                                |
|           | 320   |        |                                           |                 | 32                |                                                                                |
|           | 330   |        |                                           |                 | 33                |                                                                                |
|           | 340   |        |                                           |                 | 34                |                                                                                |
|           | 350   |        |                                           |                 | 35                |                                                                                |
|           | 360   |        |                                           |                 | 36                |                                                                                |
|           | 370   |        |                                           |                 | 37                |                                                                                |
|           | 380   |        |                                           |                 | 38                |                                                                                |
|           | 390   |        |                                           |                 | 39                |                                                                                |
|           | 400   |        |                                           |                 | 40                |                                                                                |
|           | 410   |        |                                           |                 | 41                |                                                                                |
|           | 420   |        |                                           |                 | 42                |                                                                                |
|           | 430   |        |                                           |                 | 43                |                                                                                |
|           | 440   |        |                                           |                 | 44                |                                                                                |
|           | 450   |        |                                           |                 | 45                |                                                                                |
|           | 460   |        |                                           |                 | 46                |                                                                                |
|           | 470   |        |                                           |                 | 47                |                                                                                |
|           | 480   |        |                                           |                 | 48                |                                                                                |
|           | 490   |        |                                           |                 | 49                |                                                                                |
|           | 500   |        |                                           |                 | 50                |                                                                                |
|           | 510   |        |                                           |                 | 51                |                                                                                |
|           | 520   |        |                                           |                 | 52                |                                                                                |
|           | 530   |        |                                           |                 | 53                |                                                                                |
|           | 540   |        |                                           |                 | 54                |                                                                                |
|           | 550   |        |                                           |                 | 55                |                                                                                |
|           | 560   |        |                                           |                 | 56                |                                                                                |
|           | 570   |        |                                           |                 | 57                |                                                                                |
|           | 580   |        |                                           |                 | 58                |                                                                                |
|           | 590   |        |                                           |                 | 59                |                                                                                |
|           | 600   |        |                                           |                 | 60                |                                                                                |
|           | 610   |        |                                           |                 | 61                |                                                                                |
|           | 620   |        |                                           |                 | 62                |                                                                                |
|           | 630   |        |                                           |                 | 63                |                                                                                |
|           | 640   |        |                                           |                 | 64                |                                                                                |
|           | 650   |        |                                           |                 | 65                |                                                                                |
|           | 660   |        |                                           |                 | 66                |                                                                                |
|           | 670   |        |                                           |                 | 67                |                                                                                |
|           | 680   |        |                                           |                 | 68                |                                                                                |
|           | 690   |        |                                           |                 | 69                |                                                                                |
|           | 700   |        |                                           |                 | 70                |                                                                                |
|           | 710   |        |                                           |                 | 71                |                                                                                |
|           | 720   |        |                                           |                 | 72                |                                                                                |
|           | 730   |        |                                           |                 | 73                |                                                                                |
|           | 740   |        |                                           |                 | 74                |                                                                                |
|           | 750   |        |                                           |                 | 75                |                                                                                |
|           | 760   |        |                                           |                 | 76                |                                                                                |
|           | 770   |        |                                           |                 | 77                |                                                                                |
|           | 780   |        |                                           |                 | 78                |                                                                                |
|           | 790   |        |                                           |                 | 79                |                                                                                |
|           | 800   |        |                                           |                 | 80                |                                                                                |
|           | 810   |        |                                           |                 | 81                |                                                                                |
|           | 820   |        |                                           |                 | 82                |                                                                                |
|           | 830   |        |                                           |                 | 83                |                                                                                |
|           | 840   |        |                                           |                 | 84                |                                                                                |
|           | 850   |        |                                           |                 | 85                |                                                                                |
|           | 860   |        |                                           |                 | 86                |                                                                                |
|           | 870   |        |                                           |                 | 87                |                                                                                |
|           | 880   |        |                                           |                 | 88                |                                                                                |
|           | 890   |        |                                           |                 | 89                |                                                                                |
|           | 900   |        |                                           |                 | 90                |                                                                                |
|           | 910   |        |                                           |                 | 91                |                                                                                |
|           | 920   |        |                                           |                 | 92                |                                                                                |
|           | 930   |        |                                           |                 | 93                |                                                                                |
|           | 940   |        |                                           |                 | 94                |                                                                                |
|           | 950   |        |                                           |                 | 95                |                                                                                |
|           | 960   |        |                                           |                 | 96                |                                                                                |
|           | 970   |        |                                           |                 | 97                |                                                                                |
|           | 980   |        |                                           |                 | 98                |                                                                                |
|           | 990   |        |                                           |                 | 99                |                                                                                |
|           | 1000  |        |                                           |                 | 100               |                                                                                |

BLINDS ARE FAST:  
NUMBER REQUIRED TO DONE  
1 3/4" ID SPATULA IN NO. 18  
HAMMER FALLING 30"

NOTE: SOILS USUALLY FIELD  
CLASSIFIED IN ACCORDANCE  
WITH THE UNITED SOIL  
CLASSIFICATION SYSTEM.

Hole No. SH427

| DRILLING LOG                                                                                                                 |            | DIVISION                                                           | INSTALLATION                                                                                                                                                                            |                         | SHEET                        |                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|----------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br><u>SAVANNAH HARBOR</u>                                                                                         |            | <u>SOUTH ATLANTIC</u>                                              | <u>SAVANNAH, GA</u>                                                                                                                                                                     |                         | OF 1 SHEETS                  |                                                                                                          |
| 2. LOCATION (Coordinates or Station)<br><u>N 32° 42' 30" W, 80° 48' 34" W</u>                                                |            | 10. SIZE AND TYPE OF BIT<br><u>5 1/2" FISH TAIL</u>                |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 3. DRILLING AGENCY<br><u>SAVANNAH DISTRICT</u>                                                                               |            | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br><u>MEAN MSL</u>      |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 4. HOLE NO. (As shown on drawing title and file number)<br><u>SH427</u>                                                      |            | 12. MANUFACTURER'S DESIGNATION OF DRILL<br><u>FALLING 1500</u>     |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 5. NAME OF DRILLER<br><u>W. HERMAN</u>                                                                                       |            | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                         |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            | 14. TOTAL NUMBER CORE BOXES<br>—                                   |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 7. THICKNESS OF OVERBURDEN<br><u>760.0'</u>                                                                                  |            | 15. ELEVATION GROUND WATER<br>—                                    |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 8. DEPTH DRILLED INTO ROCK<br>—                                                                                              |            | 16. DATE HOLE<br>STARTED <u>2 APR 02</u> COMPLETED <u>2 APR 02</u> |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| 9. TOTAL DEPTH OF HOLE<br><u>60.0'</u>                                                                                       |            | 17. ELEVATION TOP OF HOLE<br><u>-46.5' (HARBOR FLOOR)</u>          |                                                                                                                                                                                         |                         |                              |                                                                                                          |
|                                                                                                                              |            | 18. TOTAL CORE RECOVERY FOR BORING<br>— %                          |                                                                                                                                                                                         |                         |                              |                                                                                                          |
|                                                                                                                              |            | 19. SIGNATURE OF INSPECTOR<br><u>Samuel K</u>                      |                                                                                                                                                                                         |                         |                              |                                                                                                          |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c                                                        | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                                                       | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                |
|                                                                                                                              | 40         |                                                                    | WATER                                                                                                                                                                                   |                         |                              | NOTE CHANGE OF SCALE AT<br>40'                                                                           |
|                                                                                                                              | 45         |                                                                    | BOTTOM OF ENTRANCE CHANNEL                                                                                                                                                              |                         |                              | SET 65' OF CASING TO A<br>DEPTH OF 46.8'                                                                 |
|                                                                                                                              | 50         |                                                                    | (M) DE GRAY SILT F. SAND W/ FINE<br>M. SAND, W/ SHELL FRGS.<br>FINE, SHELL FRGS. ABSENT                                                                                                 |                         | 1                            | ELEV BOT HARBOR = -46.5'                                                                                 |
|                                                                                                                              |            |                                                                    | H. 46.7, BECOMES DE GRAY T. SILT<br>F. M. SAND W/ LITTLE C. SAND AND<br>SILT, W/ ABUNDANT SHELL FRGS<br>(-75-80%)                                                                       |                         | 2                            | 0                                                                                                        |
|                                                                                                                              |            |                                                                    | " 30, BECOMES GRAY W/ DEC. C. SAND<br>F. M. TO LITTLE SILT, AT 50.5' LAYER (M)<br>OF ABUNDANT SHELL FRGS, BLK. ROUNDED<br>SHELL FRGS. FINE/COAR. GRAINS W/ L.<br># SANDS W/ LITTLE SILT |                         | 3                            | WT LOSS 23                                                                                               |
|                                                                                                                              |            |                                                                    | FINES TO MIDDLE F. SAND W/ DEC.<br>SHELL FRGS. (OR FRGS. ESSENTIALLY<br>ABSENT)                                                                                                         |                         | 4                            | CIRCULATION LOSS<br>AFTER 3" ADD 2" OF<br>CASING (TOTAL NOW 5")                                          |
|                                                                                                                              | 55         |                                                                    | (SP-SM) OLIVE GRAY F. SAND W/ TR. SILT<br>TO SAND, W/ SHELL FRGS. (F. M. SAND<br>SILT) ABOUT 15%                                                                                        |                         | 5                            | 17                                                                                                       |
|                                                                                                                              |            |                                                                    | (SP) GRAY F. SAND W/ TR. TO MD SILT,<br>W/ F. SANDS & SMALL FRGS. (-15%) & BLK.<br>ROUNDED FRGS. (-8%) W/ OCCAS. SANDS<br>OR PARTIALS OF GRAY SILT W/ LITTLE<br>CLAY                    |                         | 6                            | 22                                                                                                       |
|                                                                                                                              |            |                                                                    | WET (SS-S-370)                                                                                                                                                                          |                         | 7                            | 28                                                                                                       |
|                                                                                                                              |            |                                                                    | SP-SSS. ABUNDANT CH. ABSENT, SHELL<br>FRGS. DEC.                                                                                                                                        |                         | 8                            | 30                                                                                                       |
|                                                                                                                              |            |                                                                    | SS-60.0 SILT 10% S. M. SILT, TR. TO<br>NO SHELL OR FRGS. WET                                                                                                                            |                         | 9                            | 55                                                                                                       |
|                                                                                                                              | 60         |                                                                    | BORING COMPLETED TO A DEPTH OF<br>60.0' BELOW MSL ON 2 APR 02<br>BLWS PER FOOT:                                                                                                         |                         |                              | 40                                                                                                       |
|                                                                                                                              |            |                                                                    | Number required to drive<br>1 3/8" ID splitspoon w/ 140 lb.<br>hammer falling 30".                                                                                                      |                         |                              | 38                                                                                                       |
|                                                                                                                              |            |                                                                    |                                                                                                                                                                                         |                         |                              | NOTE: SOILS VISUALLY FIELD<br>CLASSIFIED IN ACCORDANCE<br>WITH THE UNITED SOIL<br>CLASSIFICATION SYSTEM. |

Hole No. SH 428

| DRILLING LOG                                                                                                                 |                    | DIVISION     | INSTALLATION                                                         |                                     | SHEET 1<br>OF 2 SHEETS    |                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|----------------------------------------------------------------------|-------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |                    |              | 10. SIZE AND TYPE OF BIT<br>1 3/8" I. D. SPLITSPOON                  |                                     |                           |                                                                                                        |
| 2. LOCATION (Coordinates or Station)<br>GA X-1079781, Y-734658                                                               |                    |              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                    |                                     |                           |                                                                                                        |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |                    |              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500              |                                     |                           |                                                                                                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 428                                                            |                    |              | 13. TOTAL NO. OF SOIL SAMPLES TAKEN<br>DISTURBED 15<br>UNDISTURBED 0 |                                     |                           |                                                                                                        |
| 5. NAME OF DRILLER<br>ROUNTREE                                                                                               |                    |              | 14. TOTAL NUMBER CORE BOXES<br>NONE                                  |                                     |                           |                                                                                                        |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                    |              | 15. GROUND WATER ELEVATION<br>N/A                                    |                                     |                           |                                                                                                        |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |                    |              | 16. DATE HOLE<br>STARTED 1 MAY 2002<br>COMPLETED 1 MAY 2002          |                                     |                           |                                                                                                        |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |                    |              | 17. ELEVATION TOP OF HOLE<br>0.0' MLW                                |                                     |                           |                                                                                                        |
| 9. TOTAL DEPTH OF HOLE<br>63.9'                                                                                              |                    |              | 18. TOTAL CORE RECOVERY FOR BORING<br>NONE                           |                                     |                           |                                                                                                        |
|                                                                                                                              |                    |              | 19. SIGNATURE OF INSPECTOR<br>GREGORY TAYLOR                         |                                     |                           |                                                                                                        |
| ELEVATION<br>(FT)<br>0.0'                                                                                                    | DEPTH<br>(FT)<br>0 | SYMBOLS<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                    | PERCENT<br>MOISTURE<br>CONTENT<br>e | JAR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g<br>BLOWS/FT. |
| 5                                                                                                                            |                    |              | Water.                                                               |                                     |                           | Set 67' of casing to a<br>depth of 50.8'.<br>Elevation of bottom of<br>harbor is 44.1'.                |
| 10                                                                                                                           |                    |              |                                                                      |                                     |                           |                                                                                                        |
| 15                                                                                                                           |                    |              |                                                                      |                                     |                           |                                                                                                        |
| 20                                                                                                                           |                    |              |                                                                      |                                     |                           |                                                                                                        |
| 25                                                                                                                           |                    |              |                                                                      |                                     |                           |                                                                                                        |
| 30                                                                                                                           |                    |              |                                                                      |                                     |                           |                                                                                                        |
| 35                                                                                                                           |                    |              |                                                                      |                                     |                           |                                                                                                        |
| 30.0'                                                                                                                        |                    |              |                                                                      |                                     |                           |                                                                                                        |

CONTINUED ON SHEET #2

NOTE: SOILS VISUALLY  
FIELD CLASSIFIED IN  
ACCORDANCE WITH THE  
UNIFIED SOIL CLASS-  
IFICATION SYSTEM.

BLOWS PER FOOT;  
NUMBER REQUIRED TO  
DRIVE 1 3/8" I. D. SPLITSPOON  
W/140 LB. HAMMER FALLING  
30".

| DRILLING LOG (Cont Sheet)            |               | ELEVATION TOP OF HOLE        |                                                                                                                                                                               | Hole No. SH 428                |                      |                                                                                     |
|--------------------------------------|---------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------|-------------------------------------------------------------------------------------|
| PROJECT<br>SAVANNAH HARBOR DEEPENING |               | INSTALLATION<br>SAVANNAH, GA |                                                                                                                                                                               | SHEET 2<br>OF 2 SHEETS         |                      |                                                                                     |
| ELEVATION<br>(FT)                    | DEPTH<br>(FT) | SYMBOLS                      | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                                                  | PERCENT<br>MOISTURE<br>CONTENT | JAR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, diam of<br>weathering, etc., if significant) |
|                                      | 30            |                              |                                                                                                                                                                               |                                |                      |                                                                                     |
|                                      | 35            |                              | Water.                                                                                                                                                                        |                                |                      |                                                                                     |
|                                      | 40            |                              | BOTTOM OF HARBOR<br>(ML) Soft, low plasticity SILT,<br>trace oblong shell fragments<br>up to 1mm, acid reaction, wet,<br>dark brown.                                          |                                |                      |                                                                                     |
|                                      | 45            |                              | (SM) Quartz grained fine<br>SAND with some silt and<br>trace of oblong shell frag-<br>ments up to 1mm, acid<br>reaction, moist, dark brown.                                   |                                | 1                    | Lost first sample, 12                                                               |
|                                      |               |                              | (SP) POORLY GRADED SAND,<br>fine quartz grains, with a trace<br>of medium sand size muscovite<br>flakes, HCL reaction, moist, gray.                                           |                                | 2                    | blows were (0-2-2), (9-5-7)                                                         |
|                                      |               |                              | (SC) Quartz grained fine SAND,<br>with some clay, and few shell<br>fragments up to 10mm, HCL<br>reaction, moist, dark gray.                                                   |                                | 3                    | resampled same depth, 43                                                            |
|                                      |               |                              | (SP) POORLY GRADED SAND,<br>fine to medium quartz sand,<br>some shell fragments up to<br>30mm, few fines, HCL reaction,<br>moist, green to gray.                              |                                | 4                    | (9-22-21) 13                                                                        |
|                                      |               |                              | Few shell fragments up to 5mm                                                                                                                                                 |                                | 5                    | (8-5-7) 37                                                                          |
|                                      |               |                              | Some shell fragments up to<br>20mm.                                                                                                                                           |                                | 6                    | (14-20-17) 44                                                                       |
|                                      |               |                              | No fines, a little shell fragments<br>up to 10mm.                                                                                                                             |                                | 7                    | (8-21-23) 40                                                                        |
|                                      |               |                              | Some shell fragments up to<br>10mm, no fines.                                                                                                                                 |                                | 8                    | (14-19-21) 38                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 9                    | (14-16-22) 35                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 10                   | (12-16-19) 40                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 11                   | (14-20-20) 44                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 12                   | (19-21-33) 35                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 13                   | (18-18-17) 40                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 14                   | (14-20-20) 70                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                | 15                   | (18-21-49) 70                                                                       |
|                                      |               |                              |                                                                                                                                                                               |                                |                      | Refusal, 100 blows/0.3'.                                                            |
|                                      | 65            |                              | (ML) Very hard low plasticity<br>SILT with a little<br>fine to coarse sub angular<br>siltstone gravel up to 25mm,<br>weak HCL reaction, dry, moder-<br>ately cemented, green. |                                |                      |                                                                                     |
|                                      | 70            |                              | BOTTOM OF BORING                                                                                                                                                              |                                |                      |                                                                                     |
|                                      | 75            |                              |                                                                                                                                                                               |                                |                      |                                                                                     |

NOTE: SOILS VISUALLY  
FIELD CLASSIFIED IN  
ACCORDANCE WITH THE  
UNIFIED SOIL CLASS-  
IFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO  
DRIVE 1 3/8" I. D. SPLITSPOON  
W/140 LB. HAMMER FALLING  
30".

Hole No. SH 429

| DRILLING LOG                                                                                                                 |                    | DIVISION<br>SOUTH ATLANTIC |                                                                                                                                         | INSTALLATION<br>SAVANNAH, GA                                      |                           | SHEET 1<br>OF 1 SHEETS                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR                                                                                                |                    |                            |                                                                                                                                         | 10. SIZE AND TYPE OF BIT<br>5/2" FISHTAIL                         |                           |                                                                                                              |  |
| 2. LOCATION (Coordinates or Station)<br>GA X-1081319.70, Y-732544.68                                                         |                    |                            |                                                                                                                                         | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                 |                           |                                                                                                              |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |                    |                            |                                                                                                                                         | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500           |                           |                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 429                                                            |                    |                            |                                                                                                                                         | 13. TOTAL NO. OF SOIL SAMPLES TAKEN<br>DISTURBED 10 UNDISTURBED 0 |                           |                                                                                                              |  |
| 5. NAME OF DRILLER<br>H. FULCHER                                                                                             |                    |                            |                                                                                                                                         | 14. TOTAL NUMBER CORE BOXES<br>NONE                               |                           |                                                                                                              |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                    |                            |                                                                                                                                         | 15. GROUND WATER ELEVATION<br>N/A                                 |                           |                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN<br>>61.4' MLW                                                                                     |                    |                            |                                                                                                                                         | 16. DATE HOLE<br>STARTED 3 APR 2002 COMPLETED 3 APR 2002          |                           |                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK<br>-                                                                                              |                    |                            |                                                                                                                                         | 17. ELEVATION TOP OF HOLE<br>-46.4' (HARBOR FLOOR)                |                           |                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE<br>61.4' MLW                                                                                          |                    |                            |                                                                                                                                         | 18. TOTAL CORE RECOVERY FOR BORING<br>NONE %                      |                           |                                                                                                              |  |
|                                                                                                                              |                    |                            |                                                                                                                                         | 19. SIGNATURE OF INSPECTOR<br>DANA POLACSEK                       |                           |                                                                                                              |  |
| ELEVATION<br>(FT)<br>0.0'                                                                                                    | DEPTH<br>(FT)<br>0 | SYMBOLS<br>a               | CLASSIFICATION OF MATERIALS<br>(Description)<br>#                                                                                       | PERCENT<br>MOISTURE<br>CONTENT<br>%                               | JAR<br>SAMPLE<br>NO.<br>1 | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>BLOWS/FT.               |  |
|                                                                                                                              | 45                 |                            | Water.                                                                                                                                  |                                                                   |                           | Change of scale at 45'.<br>Set 67' of casing to a depth of 50.7'.<br>Elevation of bottom of harbor is 46.4'. |  |
|                                                                                                                              |                    |                            | BOTTOM OF ENTRANCE CHANNEL                                                                                                              |                                                                   |                           |                                                                                                              |  |
|                                                                                                                              |                    |                            | (SM) Dark gray SILTY FINE SAND, moist.                                                                                                  |                                                                   | 1                         | 0                                                                                                            |  |
|                                                                                                                              |                    |                            | Becomes fine sand with trace to little silt, wet.                                                                                       |                                                                   | 2                         | 13                                                                                                           |  |
|                                                                                                                              | 50                 |                            |                                                                                                                                         |                                                                   | 3                         | 58                                                                                                           |  |
|                                                                                                                              |                    |                            | (SP) Dark gray FINE SAND with trace silt, trace mica flakes, wet                                                                        |                                                                   | 4                         | 42                                                                                                           |  |
|                                                                                                                              |                    |                            | Coarsens to fine to medium sand, gray with occasional seam or layer dark gray silt with trace to no clay.                               |                                                                   | 5                         | 31                                                                                                           |  |
|                                                                                                                              | 55                 |                            | With trace shell fragments about 2-4mm, up to 1 cm long.                                                                                |                                                                   | 6                         | 31                                                                                                           |  |
|                                                                                                                              |                    |                            | With trace to little clayey sand, silt seams, partings absent, with approximately 10% shell fragments and black rounded rock fragments. |                                                                   | 7                         | 43                                                                                                           |  |
|                                                                                                                              |                    |                            | With trace to no clayey sand, rock fragments essentially absent, shell fragments to approximately 7%.                                   |                                                                   | 8                         | 56                                                                                                           |  |
|                                                                                                                              | 60                 |                            | Shell fragments decreased to <5% with occasional layer of silt with trace clay.                                                         |                                                                   | 9                         | 67                                                                                                           |  |
|                                                                                                                              |                    |                            | Fines to mostly fine sand, shell fragments decreased, silt layers absent.                                                               |                                                                   | 10                        | 58                                                                                                           |  |
|                                                                                                                              |                    |                            | BOTTOM OF BORING: 61.4'                                                                                                                 |                                                                   |                           |                                                                                                              |  |
| -60.0'                                                                                                                       | 65                 |                            |                                                                                                                                         |                                                                   |                           |                                                                                                              |  |
|                                                                                                                              | 70                 |                            |                                                                                                                                         |                                                                   |                           |                                                                                                              |  |
|                                                                                                                              | 75                 |                            |                                                                                                                                         |                                                                   |                           |                                                                                                              |  |
|                                                                                                                              | 80                 |                            |                                                                                                                                         |                                                                   |                           |                                                                                                              |  |

NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO DRIVE 1 3/8" I. D. SPLITSPOON W/140 LB. HAMMER FALLING 30".

| DRILLING LOG                                                                                                                 |  | DIVISION<br>SOUTH ATLANTIC |  | INSTALLATION<br>SAVANNAH, GA                            |  | Hole No. SH 430       |  | SHEET 1<br>OF 1 SHEETS  |  |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|---------------------------------------------------------|--|-----------------------|--|-------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR                                                                                                |  |                            |  | 10. SIZE AND TYPE OF BIT 1 1/8" I. D. SPLITSPOON        |  |                       |  |                         |  |
| 2. LOCATION (Coordinates or Station)<br>GA X-1082022, Y-730922                                                               |  |                            |  | 11. DATUM FOR ELEVATION SHOWN (BM or MSL)<br>MLW        |  |                       |  |                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |  |                            |  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 1500 |  |                       |  |                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 430                                                            |  |                            |  | 13. TOTAL NO. OF SOIL SAMPLES TAKEN                     |  | DISTURBED<br>15       |  | UNDISTURBED<br>0        |  |
| 5. NAME OF DRILLER<br>ROUNTREE                                                                                               |  |                            |  | 14. TOTAL NUMBER CORE BOXES<br>NONE                     |  |                       |  |                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                            |  | 15. GROUND WATER ELEVATION<br>N/A                       |  |                       |  |                         |  |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |  |                            |  | 16. DATE HOLE                                           |  | STARTED<br>3 MAY 2002 |  | COMPLETED<br>3 MAY 2002 |  |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |  |                            |  | 17. ELEVATION TOP OF HOLE<br>0'                         |  |                       |  |                         |  |
| 9. TOTAL DEPTH OF HOLE<br>65.6' MLW                                                                                          |  |                            |  | 18. TOTAL CORE RECOVERY FOR BORING<br>NONE              |  |                       |  |                         |  |
|                                                                                                                              |  |                            |  | 19. SIGNATURE OF INSPECTOR                              |  |                       |  |                         |  |

| ELEVATION<br>(FT)<br>0.0' | DEPTH<br>(FT)<br>0 | SYMBOLS | CLASSIFICATION OF MATERIALS<br>(Description)                                                                                                        | PERCENT<br>MOISTURE<br>CONTENT | JAR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc. If sign/court)<br>BLOWS/FT. |
|---------------------------|--------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------|----------------------------------------------------------------------------------------------|
|                           |                    |         | Water.                                                                                                                                              |                                |                      |                                                                                              |
|                           |                    |         | BOTTOM OF ENTRANCE CHANNEL                                                                                                                          |                                |                      | Change of scale at 45'.<br>Set 67' of casing to a<br>depth of 50.6'.                         |
| 45                        |                    |         | (ML) Low plasticity SILT, trace<br>fine quartz sand and trace<br>shell fragments up to 1mm,<br>HCL reaction, wet, brown to<br>black.                |                                | 1                    | Elevation of bottom of<br>harbor is 45.5'.<br>(0-0-7)                                        |
|                           |                    |         | (SP) POORLY GRADED SAND,<br>fine to medium quartz with<br>trace fines and few shell frag-<br>ments up to 2mm, HCL<br>reaction, moist, tan to brown. |                                | 2                    | 37<br>(11-19-18)                                                                             |
|                           |                    |         | Medium sand, tan to gray.<br>Medium to coarse sand.<br>Trace shell fragments up to<br>2mm.                                                          |                                | 3                    | 77<br>(12-30-47)                                                                             |
| 50                        |                    |         | (SW) WELL GRADED SAND, fine<br>to coarse quartz with few shell<br>fragments up to 3mm, HCL<br>reaction, moist, gray.                                |                                | 4                    | 30<br>(8-15-15)                                                                              |
|                           |                    |         | (SP) POORLY GRADED SAND,<br>medium to coarse quartz with<br>few shell fragments up to 3mm,<br>HCL reaction, moist, gray.                            |                                | 5                    | 29<br>(8-14-15)                                                                              |
|                           |                    |         | (SW) WELL GRADED SAND, fine<br>to coarse quartz with few<br>shell fragments up to 30mm,<br>HCL reaction, moist, gray.                               |                                | 6                    | 30<br>(8-14-16)                                                                              |
| 55                        |                    |         | (SP) POORLY GRADED SAND,<br>medium to coarse quartz with<br>few shell fragments up to 3mm,<br>HCL reaction, moist, gray.                            |                                | 7                    | 39<br>(9-16-23)                                                                              |
|                           |                    |         | (SW) WELL GRADED SAND, fine<br>to coarse quartz with few<br>shell fragments up to 30mm,<br>HCL reaction, moist, gray.                               |                                | 8                    | 31<br>(11-16-15)                                                                             |
|                           |                    |         | (SP) POORLY GRADED SAND,<br>fine quartz with few fines and<br>few shell fragments up to<br>5mm, HCL reaction, moist, gray.                          |                                | 9                    | 38<br>(14-20-18)                                                                             |
| 60                        |                    |         | Fine to medium quartz sand,<br>no fines.                                                                                                            |                                | 10                   | 56<br>(11-25-31)                                                                             |
|                           |                    |         | Green, fissilpartially cemented<br>silt to siltstone, weak HCL<br>reaction (Miocene).                                                               |                                | 11                   | 62<br>(23-30-32)                                                                             |
|                           |                    |         | BOTTOM OF BORING: 65.6'                                                                                                                             |                                | 12                   | 51<br>(14-25-26)                                                                             |
|                           |                    |         |                                                                                                                                                     |                                | 13                   | 86<br>(16-32-34)                                                                             |
| -65.6'                    |                    |         |                                                                                                                                                     |                                | 14                   | 100/0.5                                                                                      |
|                           |                    |         |                                                                                                                                                     |                                | 15                   | Refusal.                                                                                     |

NOTE: SOILS VISUALLY  
FIELD CLASSIFIED IN  
ACCORDANCE WITH THE  
UNIFIED SOIL CLASS-  
IFICATION SYSTEM.

BLOWS PER FOOT:  
NUMBER REQUIRED TO  
DRIVE 1 1/8" I. D. SPLITSPOON  
W/140 LB. HAMMER FALLING  
30".

Hole No. SH138

| DRILLING LOG                                                                                     |       | DIVISION                                                                                             |                                                                                                                           | INSTALLATION                                                                                |                   | SHEET                                                                          |  |
|--------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------|--|
| 1. PROJECT                                                                                       |       | SOUTH ATLANTIC                                                                                       |                                                                                                                           | Savannah-A                                                                                  |                   | 1 OF 2 SHEETS                                                                  |  |
| 2. LOCATION (Coordinates or Station)                                                             |       | X = 1081962 Y = 733644 AA                                                                            |                                                                                                                           | 10. SIZE AND TYPE OF BIT                                                                    |                   | 1 3/8" ID SPLIT SPOON                                                          |  |
| 3. DRILLING AGENCY                                                                               |       | SAVANNAH DISTRICT                                                                                    |                                                                                                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)                                                  |                   | MLW                                                                            |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                          |       | SH138                                                                                                |                                                                                                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                     |                   | Falling 1500                                                                   |  |
| 5. NAME OF DRILLER                                                                               |       | Herman                                                                                               |                                                                                                                           | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                  |                   | DISTURBED 29 UNDISTURBED 0                                                     |  |
| 6. DIRECTION OF HOLE                                                                             |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                                           | 14. TOTAL NUMBER CORE BOXES                                                                 |                   | N/A                                                                            |  |
| 7. THICKNESS OF OVERBURDEN                                                                       |       | 43.5'                                                                                                |                                                                                                                           | 15. ELEVATION GROUND WATER                                                                  |                   | N/A                                                                            |  |
| 8. DEPTH DRILLED INTO ROCK                                                                       |       | 0'                                                                                                   |                                                                                                                           | 16. DATE HOLE                                                                               |                   | STARTED 25 JUN 02 COMPLETED 25 JUN 02                                          |  |
| 9. TOTAL DEPTH OF HOLE                                                                           |       | 60.3'                                                                                                |                                                                                                                           | 17. ELEVATION TOP OF HOLE                                                                   |                   | 0                                                                              |  |
|                                                                                                  |       |                                                                                                      |                                                                                                                           | 18. TOTAL CORE RECOVERY FOR BORING                                                          |                   | N/A %                                                                          |  |
|                                                                                                  |       |                                                                                                      |                                                                                                                           | 19. SIGNATURE OF INSPECTOR                                                                  |                   |                                                                                |  |
| ELEVATION                                                                                        | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                                 | % CORE RECOVERY                                                                             | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
| 15                                                                                               |       |                                                                                                      | Change of scale to 1" = 5'                                                                                                |                                                                                             |                   | Set 37' casing to a depth of -19.8                                             |  |
| 20                                                                                               |       |                                                                                                      | Start of sample 16.8                                                                                                      |                                                                                             |                   | water                                                                          |  |
| 20                                                                                               |       |                                                                                                      | (SP) 16.8 - 25.8 Sand, poorly graded, fine, wet, grey to green                                                            |                                                                                             | 1                 | 20 (2-10-10)                                                                   |  |
| 20                                                                                               |       |                                                                                                      | 19.8-21.2 trace shell frags, few black heavy minerals                                                                     |                                                                                             | 2                 | 32 (14-10-18)                                                                  |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 3                 | 27                                                                             |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 4                 | 20-24-20                                                                       |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | X                 | 33                                                                             |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             |                   | (4-10-23)                                                                      |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             |                   | 20                                                                             |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             |                   | (6-10-10)                                                                      |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             |                   | 23                                                                             |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 5                 | (10-2-11)                                                                      |  |
| 20                                                                                               |       |                                                                                                      | (SM) 25.8 - 30.3 Sand, silty, fine grained, with some silt, few shell fragments, few black heavy minerals, wet, dark gray |                                                                                             | 6                 | 2 (0-0-2)                                                                      |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 7                 | 6 (4-2-4)                                                                      |  |
| 20                                                                                               |       |                                                                                                      | 30.3 - 31.8 no heavy minerals, little shell fragments                                                                     |                                                                                             | 8                 | 1 (1-0-1)                                                                      |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 9                 | 4 (2-2-2)                                                                      |  |
| 20                                                                                               |       |                                                                                                      | (CL) silty, silty clay with little silt, few fine grain, few sand & shell fragments, grey 31.8 - 34.0                     |                                                                                             | 10                | 11 (2-3-8)                                                                     |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 11                | 6                                                                              |  |
| 20                                                                                               |       |                                                                                                      | (SP) 34 - 34.8 Sand, poorly graded, fine to med, grey, with few fines, few shell frags, 10-15, 10-20 to grey, moist       |                                                                                             | 12                | (4-3-3)                                                                        |  |
| 20                                                                                               |       |                                                                                                      | 34.8 - 43.0 little shell fragments                                                                                        |                                                                                             | 13                | 23 (4-9-14)                                                                    |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 14                | 37 (12-16-21)                                                                  |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             | 15                | 49 (15-22-27)                                                                  |  |
| 20                                                                                               |       |                                                                                                      |                                                                                                                           |                                                                                             |                   | 17                                                                             |  |
| NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM. |       |                                                                                                      |                                                                                                                           | Continued on sheet NO 2                                                                     |                   |                                                                                |  |
|                                                                                                  |       |                                                                                                      |                                                                                                                           | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID split spoon w/140 hammer falling 30". |                   |                                                                                |  |



| DRILLING LOG (Cont Sheet)  |               |             | ELEVATION TOP OF HOLE<br>0                        |                                | Hole No. SH 438              |                                                                                           |
|----------------------------|---------------|-------------|---------------------------------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor |               |             | INSTALLATION<br>Savannah Ga                       |                                | SHEET 2<br>OF 2 SHEETS       |                                                                                           |
| ELEVATION<br>a             | DEPTH<br>40 b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                            |               |             |                                                   |                                | 15                           | (10-8-9)                                                                                  |
|                            |               |             |                                                   |                                | 16                           | 2<br>(3-1-1)                                                                              |
|                            |               |             |                                                   |                                | 17                           | 23<br>(2-12-11)                                                                           |
|                            |               |             |                                                   |                                | 18                           | 10<br>(4-5-5)                                                                             |
|                            |               |             |                                                   |                                | 19                           | 73<br>(4-4-9)                                                                             |
|                            |               |             |                                                   |                                | 20                           |                                                                                           |
|                            |               |             |                                                   |                                | 21                           | 34<br>(12-14-20)                                                                          |
|                            |               |             |                                                   |                                | 22                           | 26<br>(3-7-19)                                                                            |
|                            |               |             |                                                   |                                | 23                           | 50<br>(19-22-28)                                                                          |
|                            |               |             |                                                   |                                | 24                           | 49<br>(17-26-23)                                                                          |
|                            |               |             |                                                   |                                | 25                           | 48<br>(20-22-26)                                                                          |
|                            |               |             |                                                   |                                | 26                           | 48<br>(11-21-27)                                                                          |
|                            |               |             |                                                   |                                | 27                           | 43<br>(15-19-24)                                                                          |
|                            |               |             |                                                   |                                | 28                           | 54<br>(13-16-38)                                                                          |
|                            |               |             |                                                   |                                | 29                           | 59<br>(1-26-33)                                                                           |
|                            |               |             | End of Boring At -60.3'                           |                                |                              |                                                                                           |

NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

BLOWS PER FOOT:  
Number required to drive 1 3/8" ID splitspoon w/140 hammer falling 30".

Hole No. SH 437

| DRILLING LOG                                                                                                                 |              | DIVISION                                                | INSTALLATION                                                                                                          |                         | SHEET                                                                                                    |                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |              | South Atlantic                                          | Savannah Ga                                                                                                           |                         | OF 1 SHEETS                                                                                              |                                                                                           |
| 2. LOCATION (Coordinates or Station)<br>Ga X = 1071524 Y = 742060                                                            |              | 10. SIZE AND TYPE OF BIT 1 3/8" ID Split Spoon          |                                                                                                                       |                         |                                                                                                          |                                                                                           |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW       |                                                                                                                       |                         |                                                                                                          |                                                                                           |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 439                                                            |              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 1500 |                                                                                                                       |                         |                                                                                                          |                                                                                           |
| 5. NAME OF DRILLER<br>Rountree                                                                                               |              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN          |                                                                                                                       | DISTURBED<br>11         | UNDISTURBED<br>0                                                                                         |                                                                                           |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              | 14. TOTAL NUMBER CORE BOXES                             |                                                                                                                       | None                    |                                                                                                          |                                                                                           |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |              | 15. ELEVATION GROUND WATER                              |                                                                                                                       | NA                      |                                                                                                          |                                                                                           |
| 8. DEPTH DRILLED INTO ROCK<br>0'                                                                                             |              | 16. DATE HOLE                                           |                                                                                                                       | STARTED<br>7 MAY 02     | COMPLETED<br>7 MAY 02                                                                                    |                                                                                           |
| 9. TOTAL DEPTH OF HOLE<br>60'                                                                                                |              | 17. ELEVATION TOP OF HOLE                               |                                                                                                                       | 0'                      |                                                                                                          |                                                                                           |
|                                                                                                                              |              | 18. TOTAL CORE RECOVERY FOR BORING                      |                                                                                                                       | None %                  |                                                                                                          |                                                                                           |
|                                                                                                                              |              | 19. SIGNATURE OF INSPECTOR                              |                                                                                                                       |                         |                                                                                                          |                                                                                           |
| ELEVATION<br>O a                                                                                                             | DEPTH<br>O b | LEGEND<br>c                                             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                     | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f                                                                             | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                                                                                                                              | 40           |                                                         | Change of scale 1"=5'                                                                                                 |                         |                                                                                                          | Set 62 feet of casing<br>to a depth of -47.9'                                             |
|                                                                                                                              | 45           |                                                         | Start of sampling at -43.5'                                                                                           |                         |                                                                                                          | water                                                                                     |
|                                                                                                                              |              |                                                         | Clay, low plasticity, soft, a little fine<br>fine sand, few shell fragments up to 5mm<br>MLL RXX, wet, dark gray (CL) |                         | 1                                                                                                        | 15<br>(2-6-9)                                                                             |
|                                                                                                                              |              |                                                         | Sandy, poorly sorted fine sand and silt<br>with a few shell fragments (SP)                                            |                         | 2                                                                                                        | 35<br>(7-12-23)                                                                           |
|                                                                                                                              |              |                                                         |                                                                                                                       |                         | 3                                                                                                        | 5<br>(15-29-22)                                                                           |
|                                                                                                                              | 50           |                                                         | Silt, low plasticity, fine sand, some fine<br>grained silt, MLL RXX, reddish<br>green (ML) - Micaceous                |                         | 4                                                                                                        | 20<br>(2-6-14)                                                                            |
|                                                                                                                              |              |                                                         |                                                                                                                       |                         | 5                                                                                                        | 22<br>(12-16-1)                                                                           |
|                                                                                                                              |              |                                                         |                                                                                                                       |                         | 6                                                                                                        | 31<br>(7-5-10)                                                                            |
|                                                                                                                              |              |                                                         |                                                                                                                       |                         | 7                                                                                                        | 15<br>(7-14-10)                                                                           |
|                                                                                                                              | 55           |                                                         |                                                                                                                       |                         | 8                                                                                                        | 28<br>(5-18-15)                                                                           |
|                                                                                                                              |              |                                                         |                                                                                                                       |                         | 9                                                                                                        | 12<br>(7-12-30)                                                                           |
|                                                                                                                              |              |                                                         |                                                                                                                       |                         | 10                                                                                                       | 57<br>(3-8-16)                                                                            |
|                                                                                                                              | 60           |                                                         | End of Boring at -60'                                                                                                 |                         | 11                                                                                                       | 31<br>(7-9-22)                                                                            |
|                                                                                                                              |              |                                                         | BLOWS PER FOOT:<br>Number required to drive<br>1 3/8" ID splitspoon w/140 lb.<br>hammer falling 30".                  |                         | NOTE: SOILS VISUALLY FIELD<br>CLASSIFIED IN ACCORDANCE<br>WITH THE UNIFIED SOIL<br>CLASSIFICATION SYSTEM |                                                                                           |

Hole No. SH 440

| DRILLING LOG                                                                                                                       |       | DIVISION       | INSTALLATION                                                                                                 |                 | SHEET 1           |                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|--------------------------------------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
|                                                                                                                                    |       | South Atlantic | Savannah Ga                                                                                                  |                 | OF 2 SHEETS       |                                                                                |
| 1. PROJECT                                                                                                                         |       |                | 10. SIZE AND TYPE OF BIT $1\frac{1}{2}$ " ID split spoon                                                     |                 |                   |                                                                                |
| 2. LOCATION (Coordinates or Station)                                                                                               |       |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)                                                                   |                 |                   |                                                                                |
| Ga X=1084686 Y=729887                                                                                                              |       |                | MLW                                                                                                          |                 |                   |                                                                                |
| 3. DRILLING AGENCY                                                                                                                 |       |                | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                                      |                 |                   |                                                                                |
| Savannah District                                                                                                                  |       |                | Falling 1500                                                                                                 |                 |                   |                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)                                                                            |       |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                   |                 | DISTURBED         | UNDISTURBED                                                                    |
| SH 440                                                                                                                             |       |                | 29                                                                                                           |                 | 29                | 0                                                                              |
| 5. NAME OF DRILLER                                                                                                                 |       |                | 14. TOTAL NUMBER CORE BOXES                                                                                  |                 |                   |                                                                                |
| Herman                                                                                                                             |       |                | None                                                                                                         |                 |                   |                                                                                |
| 6. DIRECTION OF HOLE                                                                                                               |       |                | 15. ELEVATION GROUND WATER                                                                                   |                 |                   |                                                                                |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.                               |       |                | NA                                                                                                           |                 |                   |                                                                                |
| 7. THICKNESS OF OVERBURDEN                                                                                                         |       |                | 16. DATE HOLE                                                                                                |                 | STARTED           | COMPLETED                                                                      |
| 45"                                                                                                                                |       |                | 27 Jun 22                                                                                                    |                 | 27 Jun 22         |                                                                                |
| 8. DEPTH DRILLED INTO ROCK                                                                                                         |       |                | 17. ELEVATION TOP OF HOLE                                                                                    |                 |                   |                                                                                |
| 0                                                                                                                                  |       |                | 0'                                                                                                           |                 |                   |                                                                                |
| 9. TOTAL DEPTH OF HOLE                                                                                                             |       |                | 18. TOTAL CORE RECOVERY FOR BORING                                                                           |                 |                   |                                                                                |
| 60.7'                                                                                                                              |       |                | None                                                                                                         |                 |                   |                                                                                |
|                                                                                                                                    |       |                | 19. SIGNATURE OF INSPECTOR                                                                                   |                 |                   |                                                                                |
|                                                                                                                                    |       |                |                                                                                                              |                 |                   |                                                                                |
| ELEVATION                                                                                                                          | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                                    | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                                                                                                    |       |                | Change scale to 1" = 5'                                                                                      |                 |                   | Set 37 feet of casing to a depth of 19.5'                                      |
|                                                                                                                                    | 15'   |                | Start of Sampling at 15.7'                                                                                   |                 |                   | Water                                                                          |
|                                                                                                                                    |       |                | (SP) 15.7-26.2" Sand, poorly graded fine etc, trace black heavy minerals, moist, green to gray               |                 | 1                 | 99<br>(0-28-71)                                                                |
|                                                                                                                                    |       |                |                                                                                                              |                 | 2                 | 96<br>(70-73-23)                                                               |
|                                                                                                                                    | 20    |                |                                                                                                              |                 | 3                 | 22<br>(15-16-16)                                                               |
|                                                                                                                                    |       |                |                                                                                                              |                 | 4                 | 37<br>(11-19-18)                                                               |
|                                                                                                                                    |       |                |                                                                                                              |                 | 5                 | 45<br>(13-21-24)                                                               |
|                                                                                                                                    | 25    |                |                                                                                                              |                 | 6                 | 34<br>(8-12-22)                                                                |
|                                                                                                                                    |       |                |                                                                                                              |                 | 7                 | 19<br>(11-12-7)                                                                |
|                                                                                                                                    |       |                | lost sample                                                                                                  |                 | X                 | weight of rods<br>0<br>(0-0-0)                                                 |
|                                                                                                                                    |       |                | (LL) 27.7-29.2 clay, low plasticity, silt with little shells up to 2mm, wet gray                             |                 | 8                 | 7<br>(3-3-4)                                                                   |
|                                                                                                                                    | 30    |                | 29.2-35.2 No shells                                                                                          |                 | 9                 | 0<br>(0-0-0)                                                                   |
|                                                                                                                                    |       |                |                                                                                                              |                 | 10                | 0<br>(0-0-0)                                                                   |
|                                                                                                                                    |       |                |                                                                                                              |                 | 11                | 2<br>(2-1-1)                                                                   |
|                                                                                                                                    | 35    |                | 35.2-36.7 trace fine grained etc Sand, little shell fragments up to 10mm                                     |                 | 12                | 2<br>(1-1-1)                                                                   |
|                                                                                                                                    |       |                | (SP) 36.7-48.7 Sand, poorly graded fine grain etc, little shell fragments up to 10mm, few fines, moist, gray |                 | 13                | 14<br>(4-3-9)                                                                  |
|                                                                                                                                    |       |                |                                                                                                              |                 | 14                | 35<br>(4-10-25)                                                                |
|                                                                                                                                    | 40    |                |                                                                                                              |                 | 15                | 37<br>(8-11-16)                                                                |
|                                                                                                                                    |       |                | Continued on sheet No. 2                                                                                     |                 |                   |                                                                                |
| <p align="center"><b>BLOWS PER FOOT:</b></p> <p>Number required to drive<br/>1 3/8" ID splitspoon w/140 lb hammer falling 30".</p> |       |                |                                                                                                              |                 |                   |                                                                                |
| <p align="center"><b>NOTE: SOILS USUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.</b></p>       |       |                |                                                                                                              |                 |                   |                                                                                |

| DRILLING LOG (Cont Sheet)  |              |             | ELEVATION TOP OF HOLE<br>0                                                                                                       |                              | Hole No. SH 440              |                                                                                           |
|----------------------------|--------------|-------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------|
| PROJECT<br>Savannah Harbor |              |             | INSTALLATION<br>Savannah Ga                                                                                                      |                              | SHEET 2<br>OF 2 SHEETS       |                                                                                           |
| ELEVATION<br>a             | DEPTH<br>40b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                | % CORE<br>RECOV.<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|                            |              |             |                                                                                                                                  |                              | 16                           | 43<br>(14-21-22)                                                                          |
|                            |              |             |                                                                                                                                  |                              | 17                           | 39<br>(11-21-18)                                                                          |
|                            |              |             |                                                                                                                                  |                              | 18                           | 34<br>(14-16-18)                                                                          |
| 45                         |              |             |                                                                                                                                  |                              | 19                           | 10<br>(7-4-6)                                                                             |
|                            |              |             | (CH) 45.7-47.2 Clay, high plasticity<br>firm, few shell fragments up to<br>5mm, moist, gray                                      |                              | 20                           | 8<br>(2-4-4)                                                                              |
|                            |              |             | 47.2-48.7 trace shells up to 1mm                                                                                                 |                              | 21                           | 12<br>(3-4-8)                                                                             |
| 50                         |              |             | 48.7-50.2 No shells, trace fine<br>lt. sand                                                                                      |                              | 22                           | 17<br>(5-7-10)                                                                            |
|                            |              |             | 50.2-53.2 No sand                                                                                                                |                              | 23                           | 20<br>(6-7-13)                                                                            |
|                            |              |             |                                                                                                                                  |                              | 24                           | 26<br>(7-11-15)                                                                           |
| 55                         |              |             | (CH) 53.2-54.7 Clay, low plasticity, firm<br>little fine to med. lt. sand, moist<br>gray                                         |                              | 25                           | 55<br>(11-24-31)                                                                          |
|                            |              |             | (SP) Sand, poorly graded, fine to<br>medium grain etc., little fines<br>few shell fragments up to 5mm<br>moist, gray (54.7-56.2) |                              | 26                           | 49<br>(16-21-28)                                                                          |
|                            |              |             | 56.2-57.2 fine sand, few fines<br>few shell fragments up to 5mm                                                                  |                              | 27                           | 52<br>(25-26-26)                                                                          |
|                            |              |             | 57.2-60.7 little fines                                                                                                           |                              | 28                           | 14<br>(5-6-8)                                                                             |
| 60                         |              |             |                                                                                                                                  |                              | 29                           | 16<br>(4-6-10)                                                                            |
|                            |              |             | End of Boring at 60.7'                                                                                                           |                              |                              |                                                                                           |

Blows per foot:  
Number required to drive  
1 3/8" ID split spoon w/140 lb.

NOTE: SOILS VISUALLY CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

FD-100 (Rev. 3-7-71)

| DRILLING LOG                                                                                                                           |            | DIVISION       |                                                                                                   | INSTALLATION                                                                                                          |                        | SHEET 1 OF 1 SHEETS                                                                    |                  |
|----------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------|------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                          |            | South Atlantic |                                                                                                   | Savannah Ga                                                                                                           |                        |                                                                                        |                  |
| 2. LOCATION (Coordinates or Station)<br>Ga X=1075854 Y=738637                                                                          |            |                |                                                                                                   | 10. SIZE AND TYPE OF BIT<br>3/4" ID Split Spoon                                                                       |                        |                                                                                        |                  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                                |            |                |                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (FIM or MSL)<br>MLW                                                                     |                        |                                                                                        |                  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 441                                                                      |            |                |                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling 1500                                                               |                        |                                                                                        |                  |
| 5. NAME OF DRILLER<br>Herman                                                                                                           |            |                |                                                                                                   | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                            |                        | DISTURBED<br>12                                                                        | UNDISTURBED<br>0 |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.           |            |                |                                                                                                   | 14. TOTAL NUMBER CORE BOXES<br>None                                                                                   |                        |                                                                                        |                  |
| 7. THICKNESS OF OVERBURDEN<br>15'                                                                                                      |            |                |                                                                                                   | 15. ELEVATION GROUND WATER<br>NA                                                                                      |                        |                                                                                        |                  |
| 8. DEPTH DRILLED INTO ROCK<br>0'                                                                                                       |            |                |                                                                                                   | 16. DATE HOLE<br>STARTED 26 Jun 02 COMPLETED 26 Jun 02                                                                |                        |                                                                                        |                  |
| 9. TOTAL DEPTH OF HOLE<br>60.5'                                                                                                        |            |                |                                                                                                   | 17. ELEVATION TOP OF HOLE<br>0'                                                                                       |                        |                                                                                        |                  |
|                                                                                                                                        |            |                |                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING<br>None %                                                                          |                        |                                                                                        |                  |
|                                                                                                                                        |            |                |                                                                                                   | 19. SIGNATURE OF INSPECTOR                                                                                            |                        |                                                                                        |                  |
| ELEVATION<br>a                                                                                                                         | DEPTH<br>b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                 | % CORE RECOVERY<br>e                                                                                                  | BOX OR SAMPLE NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g |                  |
|                                                                                                                                        |            |                | Change of Scale 1" = 5'                                                                           |                                                                                                                       |                        | Set 70 feet of casing to a depth of 53'                                                |                  |
|                                                                                                                                        | 45         |                | Start of sampling at 45.5'                                                                        |                                                                                                                       |                        | Water weight of Rods                                                                   |                  |
|                                                                                                                                        |            |                | (45.5-48.5) silt, high plasticity, very soft, wet, black                                          |                                                                                                                       | 1                      | 0                                                                                      |                  |
|                                                                                                                                        |            |                | (48.5-49.5) Sand, poorly graded, fine grain etc, few fines, trace muscovite, moist, black to gray |                                                                                                                       | 2                      | (0-0-0)<br>28<br>(6-12-16)                                                             |                  |
|                                                                                                                                        | 50         |                | 48.5 to 53.0 No muscovite, few black heavy minerals (fine sand size) trace fines tan to gray      |                                                                                                                       | 3                      | 11<br>(9-6-5)                                                                          |                  |
|                                                                                                                                        |            |                | 53-60.5" trace shell fragments upto 2mm                                                           |                                                                                                                       | 4                      | 17<br>(4-11-6)                                                                         |                  |
|                                                                                                                                        |            |                |                                                                                                   |                                                                                                                       | 5                      | 3<br>(0-1-2)                                                                           |                  |
|                                                                                                                                        |            |                |                                                                                                   |                                                                                                                       | 6                      | 20<br>(2-4-16)                                                                         |                  |
|                                                                                                                                        |            |                |                                                                                                   |                                                                                                                       | 7                      | 43<br>(26-17-26)                                                                       |                  |
|                                                                                                                                        |            |                |                                                                                                   |                                                                                                                       | 8                      | 41<br>(15-22-29)                                                                       |                  |
|                                                                                                                                        |            |                |                                                                                                   |                                                                                                                       | 9                      | 47<br>(5-22-25)                                                                        |                  |
|                                                                                                                                        | 60         |                | 60.5-62 little fines                                                                              |                                                                                                                       | 10                     | 35<br>(10-15-20)                                                                       |                  |
|                                                                                                                                        |            |                | (62-63.5) Sand, silty fine to coarse with some silt, moist, brittle when dry, green (Manganese)   |                                                                                                                       | 11                     | 32<br>(11-16-16)                                                                       |                  |
|                                                                                                                                        |            |                | End of Boring at 63.5'                                                                            |                                                                                                                       | 12                     | 48<br>(12-19-26)                                                                       |                  |
| <p align="center"><b>BLOWS PER FOOT:</b></p> <p>Number required to drive<br/>3/8" ID split spoon w/140 lb.<br/>hammer falling 30".</p> |            |                |                                                                                                   | <p align="center">NOTE: SOILS VISUALLY SOIL CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.</p> |                        |                                                                                        |                  |

# SAVANNAH HARBOR BORING LOGS

From Station -38+500

To

Station -60+000

Hole No. 12

| DRILLING LOG                                                                                         |       | DIVISION       |                                                                                                 | INSTALLATION                               |                   | Savannah Harbor                                                                                                                                                                                              |  | SHEET 1     |  |
|------------------------------------------------------------------------------------------------------|-------|----------------|-------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------|--|
| 1. PROJECT                                                                                           |       | South Atlantic |                                                                                                 | Outer Channel                              |                   |                                                                                                                                                                                                              |  | OF 1 SHEETS |  |
| Tybee Island Beach Erosion Control Project                                                           |       |                |                                                                                                 | 10. SIZE AND TYPE OF BIT                   |                   | 4" Casing tube                                                                                                                                                                                               |  |             |  |
| 2. LOCATION (Coordinates or Station)                                                                 |       |                |                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) |                   | MLW                                                                                                                                                                                                          |  |             |  |
| X942790 Y720190                                                                                      |       |                |                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | Alpine Vibracore                                                                                                                                                                                             |  |             |  |
| 3. DRILLING AGENCY                                                                                   |       |                |                                                                                                 | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN  |                   | DISTURBED                                                                                                                                                                                                    |  | UNDISTURBED |  |
| Savannah District                                                                                    |       |                |                                                                                                 | 14. TOTAL NUMBER CORE BOXES                |                   |                                                                                                                                                                                                              |  |             |  |
| 4. HOLE NO. (As shown on drawing title and file number)                                              |       | 12             |                                                                                                 | 15. ELEVATION GROUND WATER                 |                   |                                                                                                                                                                                                              |  |             |  |
| 5. NAME OF DRILLER                                                                                   |       |                |                                                                                                 | 16. DATE HOLE                              |                   | STARTED                                                                                                                                                                                                      |  | COMPLETED   |  |
| Charles Dill                                                                                         |       |                |                                                                                                 | 1978                                       |                   | 1978                                                                                                                                                                                                         |  |             |  |
| 6. DIRECTION OF HOLE                                                                                 |       |                |                                                                                                 | 17. ELEVATION TOP OF HOLE                  |                   | 41.0' water depth                                                                                                                                                                                            |  |             |  |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING         |                   |                                                                                                                                                                                                              |  | 1           |  |
| 7. THICKNESS OF OVERBURDEN                                                                           |       | 24.0'          |                                                                                                 | 19. SIGNATURE OF INSPECTOR                 |                   | JAMES E. BOLEN, Geologist                                                                                                                                                                                    |  |             |  |
| 8. DEPTH DRILLED INTO ROCK                                                                           |       | 0.0'           |                                                                                                 |                                            |                   |                                                                                                                                                                                                              |  |             |  |
| 9. TOTAL DEPTH OF HOLE                                                                               |       | 24.0'          |                                                                                                 |                                            |                   |                                                                                                                                                                                                              |  |             |  |
| ELEVATION                                                                                            | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                       | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |             |  |
| -37.5'                                                                                               | 0'    |                | SM - Gray, silty, medium-fine sand                                                              |                                            | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |             |  |
|                                                                                                      | 5'    |                | ML - Green, sandy (fine) silt with 10% stiff, dense interlayered with silty fine sand 0.3'-0.9' |                                            |                   |                                                                                                                                                                                                              |  |             |  |
|                                                                                                      | 10'   |                | With 5% fine sand                                                                               |                                            |                   |                                                                                                                                                                                                              |  |             |  |
|                                                                                                      | 20'   |                | SC - Green, brown, clayey, fine sand, stiff, dense                                              |                                            | 2                 |                                                                                                                                                                                                              |  |             |  |
|                                                                                                      | 25'   |                |                                                                                                 |                                            | 3                 |                                                                                                                                                                                                              |  |             |  |
| -47.3'                                                                                               | 30'   |                | Bottom of Boring 30.0'                                                                          |                                            |                   |                                                                                                                                                                                                              |  |             |  |
|                                                                                                      |       |                | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.        |                                            |                   |                                                                                                                                                                                                              |  |             |  |

[illegible]



Hole No. 20

| DRILLING LOG                                                                                                              |  | DIVISION       | INSTALLATION                                             | Savannah Harbor | SHEET 1<br>OF 1 SHEETS |
|---------------------------------------------------------------------------------------------------------------------------|--|----------------|----------------------------------------------------------|-----------------|------------------------|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |  | South Atlantic | Outer Channel                                            |                 |                        |
| 2. LOCATION (Coordinates or Station)                                                                                      |  |                | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                 |                        |
| X928228 Y728160                                                                                                           |  |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)               |                 |                        |
| 3. DRILLING AGENCY Savannah District                                                                                      |  |                | MLW                                                      |                 |                        |
| 4. HOLE NO. (As shown on drawing title and file number) 20                                                                |  |                | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                 |                        |
| 5. NAME OF DRILLER Charles Dill                                                                                           |  |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN               | DISTURBED 2     | UNDISTURBED 0          |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                | 14. TOTAL NUMBER CORE BOXES                              |                 |                        |
| 7. THICKNESS OF OVERBURDEN 13.2'                                                                                          |  |                | 15. ELEVATION GROUND WATER                               |                 |                        |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |  |                | 16. DATE HOLE                                            | STARTED 1978    | COMPLETED 1978         |
| 9. TOTAL DEPTH OF HOLE 13.2'                                                                                              |  |                | 17. ELEVATION TOP OF HOLE 45.0' water depth              |                 |                        |
|                                                                                                                           |  |                | 18. TOTAL CORE RECOVERY FOR BORING %                     |                 |                        |
|                                                                                                                           |  |                | 19. SIGNATURE OF INSPECTOR JAMES E. BOLEN, Geologist     |                 |                        |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                                                                                                        | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |
|-----------|-------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -416.3    | 0     |        | OH - Black, organic lat, clayey silt                                                                                                                             |                 | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |
|           | 5     |        | SM - Gray, silty, medium-fine sand with beach shells 10% with clay 2.0' to 5.0' and 6.0' to 6.5' green, fat silt lenses (hard, dense) 6.7' to 6.8', 7.2' to 7.6' |                 | 2                 |                                                                                                                                                                                                              |
|           | 10    |        | Slightly silty coarse-medium sand with gravel sized shells 15% silt lenses 14.0' - 14.2' 14.4'-14.6'                                                             |                 |                   |                                                                                                                                                                                                              |
| -56.3     | 15    |        | Bottom of Boring 14.7'                                                                                                                                           |                 |                   |                                                                                                                                                                                                              |
|           |       |        | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.                                                                         |                 |                   |                                                                                                                                                                                                              |

Hole No. 21

| DRILLING LOG                                                                                                              |             | DIVISION       |                                                                                               | INSTALLATION                                             |                         | SHEET                                                                                                                                                                                                        |  |
|---------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |             | South Atlantic |                                                                                               | Savannah Harbor Outer Channel                            |                         | 1 OF 1 SHEETS                                                                                                                                                                                                |  |
| 2. LOCATION (Coordinates or Station) X929903 Y728142                                                                      |             |                |                                                                                               | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                         |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY Savannah District                                                                                      |             |                |                                                                                               | 11. DATUM FOR ELEVATION SHOWN (BSM & ASL) MLW            |                         |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) 21                                                                |             |                |                                                                                               | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                         |                                                                                                                                                                                                              |  |
| 5. NAME OF DRILLER Charles Dill                                                                                           |             |                |                                                                                               | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                |                         | DISTURBED 4 UNDISTURBED 0                                                                                                                                                                                    |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                |                                                                                               | 14. TOTAL NUMBER CORE BOXES                              |                         |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 30.0'                                                                                          |             |                |                                                                                               | 15. ELEVATION GROUND WATER                               |                         |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |             |                |                                                                                               | 16. DATE HOLE STARTED 1978 COMPLETED 1978                |                         |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 30.0'                                                                                              |             |                |                                                                                               | 17. ELEVATION TOP OF HOLE 18.0' water depth              |                         |                                                                                                                                                                                                              |  |
|                                                                                                                           |             |                |                                                                                               | 18. TOTAL CORE RECOVERY FOR BORING %                     |                         |                                                                                                                                                                                                              |  |
|                                                                                                                           |             |                |                                                                                               | 19. SIGNATURE OF INSPECTOR JAMES E. BOLEN, Geologist     |                         |                                                                                                                                                                                                              |  |
| ELEVATION<br>ft                                                                                                           | DEPTH<br>ft | LEGEND         | CLASSIFICATION OF MATERIALS<br>(Description)                                                  | % CORE<br>RECOVERY                                       | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                         |  |
| 15.7                                                                                                                      |             |                | SM - Gray, silty, fine sand with shells 5%<br>Black clayey silt lens 3.3' - 3.4'              |                                                          | 1                       | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                           | 5           |                | MH - Gray-green, fat clayey silt with fine sand inclusion 30%                                 |                                                          | 2                       |                                                                                                                                                                                                              |  |
|                                                                                                                           | 10          |                | SM-SC - Green, silty, medium-fine sand with clay and with fine-coarse gravel sized shells 15% |                                                          | 3                       |                                                                                                                                                                                                              |  |
|                                                                                                                           | 15          |                | SM - Green, silty, medium-fine sands with shells 15%                                          |                                                          | 4                       |                                                                                                                                                                                                              |  |
|                                                                                                                           |             |                | MH - Gray-green fat, clayey silt with fine sand inclusions 30%                                |                                                          |                         |                                                                                                                                                                                                              |  |
|                                                                                                                           |             |                | Bottom of Boring 19.5'                                                                        |                                                          |                         |                                                                                                                                                                                                              |  |
|                                                                                                                           |             |                | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.      |                                                          |                         |                                                                                                                                                                                                              |  |

Hole No. 22

| DRILLING LOG                                            |       | DIVISION                                                                                  |                                                                                          | INSTALLATION                               |                   | SHEET 1                                                                                                                                                                                                      |  |
|---------------------------------------------------------|-------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT                                              |       | South Atlantic                                                                            |                                                                                          | Savannah Harbor                            |                   | OF 1 SHEETS                                                                                                                                                                                                  |  |
| Control Project                                         |       | Outer Channel                                                                             |                                                                                          | 10. SIZE AND TYPE OF BIT                   |                   | 4" Casing tube                                                                                                                                                                                               |  |
| 2. LOCATION (Coordinates or Station)                    |       | X931818 Y726132                                                                           |                                                                                          | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) |                   | MLW                                                                                                                                                                                                          |  |
| 3. DRILLING AGENCY                                      |       | Savannah District                                                                         |                                                                                          | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                   | Alpine Vibracore                                                                                                                                                                                             |  |
| 4. HOLE NO. (As shown on drawing title and file number) |       | 22                                                                                        |                                                                                          | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                   | DISTURBED 2 UNDISTURBED 0                                                                                                                                                                                    |  |
| 5. NAME OF DRILLER                                      |       | Charles Dill                                                                              |                                                                                          | 14. TOTAL NUMBER CORE BOXES                |                   |                                                                                                                                                                                                              |  |
| 6. DIRECTION OF HOLE                                    |       | <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                          | 15. ELEVATION GROUND WATER                 |                   |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN                              |       | 16.1'                                                                                     |                                                                                          | 16. DATE HOLE                              |                   | STARTED 1978 COMPLETED 1978                                                                                                                                                                                  |  |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                                      |                                                                                          | 17. ELEVATION TOP OF HOLE                  |                   | 42.0' water depth                                                                                                                                                                                            |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 16.1'                                                                                     |                                                                                          | 18. TOTAL CORE RECOVERY FOR BORING         |                   | %                                                                                                                                                                                                            |  |
|                                                         |       |                                                                                           |                                                                                          | 19. SIGNATURE OF INSPECTOR                 |                   | JAMES E. ROLEN, Geologist                                                                                                                                                                                    |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                                    | CLASSIFICATION OF MATERIALS (Description)                                                | % CORE RECOVERY                            | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |
| 40.7' MLM                                               | 0     |                                                                                           | OH - Black organic silt, fat                                                             |                                            |                   |                                                                                                                                                                                                              |  |
|                                                         | 5     |                                                                                           | SM - Gray, silty, medium-fine sand with fine-coarse gravel sized shells 15%              |                                            | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                         | 10    |                                                                                           | Low silt percent with 5% shells, medium grained                                          |                                            | 2                 |                                                                                                                                                                                                              |  |
|                                                         | 15    |                                                                                           | Silty coarse-medium sand woody layer 14.9' to 15.1'                                      |                                            |                   |                                                                                                                                                                                                              |  |
| -54.8                                                   |       |                                                                                           | Bottom of Boring 16.1'                                                                   |                                            |                   |                                                                                                                                                                                                              |  |
|                                                         |       |                                                                                           | NOTE: Soils field classified in accordance with the Unified Soil Classification Systems. |                                            |                   |                                                                                                                                                                                                              |  |

Hole No. 23

| DRILLING LOG                                                                                                              |       | DIVISION       |                                                                                                    | INSTALLATION                                             |                   | SHEET 1                                                                                                                                                                                                      |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion Control Project                                                                     |       | South Atlantic |                                                                                                    | Savannah Harbor Outer Channel                            |                   | of 1 SHEETS                                                                                                                                                                                                  |  |
| 2. LOCATION (Coordinates or Station) Y932751 Y726479                                                                      |       |                |                                                                                                    | 10. SIZE AND TYPE OF BIT 4" Casing tube                  |                   |                                                                                                                                                                                                              |  |
| 3. DRILLING AGENCY Savannah District                                                                                      |       |                |                                                                                                    | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLLW          |                   |                                                                                                                                                                                                              |  |
| 4. HOLE NO. (As shown on drawing title and file number) 23                                                                |       |                |                                                                                                    | 12. MANUFACTURER'S DESIGNATION OF DRILL Alpine Vibracore |                   |                                                                                                                                                                                                              |  |
| 5. NAME OF DRILLER Charles Dill                                                                                           |       |                |                                                                                                    | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                |                   | DISTURBED 3 UNDISTURBED 0                                                                                                                                                                                    |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                |                                                                                                    | 14. TOTAL NUMBER CORE BOXES                              |                   |                                                                                                                                                                                                              |  |
| 7. THICKNESS OF OVERBURDEN 20.0'                                                                                          |       |                |                                                                                                    | 15. ELEVATION GROUND WATER                               |                   |                                                                                                                                                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                |                                                                                                    | 16. DATE HOLE STARTED 1978 COMPLETED 1978                |                   |                                                                                                                                                                                                              |  |
| 9. TOTAL DEPTH OF HOLE 20.0'                                                                                              |       |                |                                                                                                    | 17. ELEVATION TOP OF HOLE 21.0' water depth              |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                |                                                                                                    | 18. TOTAL CORE RECOVERY FOR BORING 3                     |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                |                                                                                                    | 19. SIGNATURE OF INSPECTOR JAMES E. BOLEN, Geologist     |                   |                                                                                                                                                                                                              |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND         | CLASSIFICATION OF MATERIALS (Description)                                                          | % CORE RECOVERY                                          | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                                                                               |  |
| -20.0' MLLW                                                                                                               | 0'    |                |                                                                                                    |                                                          |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           | 5'    |                | SP-SM - Gray, silty, poorly graded, fine sand                                                      |                                                          | 1                 | NOTE: Because of expansion and compaction of the core during the drilling process, Bottom of Boring Depth (column d) may not coincide with Thickness of Overburden (line 7) or Total Depth of Hole (line 9). |  |
|                                                                                                                           | 10'   |                | Brown with shells 5%                                                                               |                                                          | 2                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 15'   |                | MH - Gray-green fat, clayey silt. 12.3' - Jet black with organic matter (SP-SM lens 14.3' - 14.8') |                                                          | 3                 |                                                                                                                                                                                                              |  |
|                                                                                                                           | 20'   |                | SM - Gray-green, slightly clayey with shells 15%                                                   |                                                          |                   |                                                                                                                                                                                                              |  |
|                                                                                                                           |       |                | Bottom of Boring 20.0'                                                                             |                                                          |                   |                                                                                                                                                                                                              |  |

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                   | INSTALLATION Savannah Harbor<br>Outer Channel              |                                | Hole No. 24<br>SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion<br>Control Project                                                                     |       |                            |                                                                                                                   | 10. SIZE AND TYPE OF BIT 4" Casing tube                    |                                |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>Y933770 Y725002                                                                      |       |                            |                                                                                                                   | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW          |                                |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Wikström |                                |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title<br>and file number) 24                                                                |       |                            |                                                                                                                   | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN             |                                | DISTURBED 5<br>UNDISTURBED 0                                                                                                                                                                                                         |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                                   | 14. TOTAL NUMBER CORE BOXES                                |                                |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                   | 15. ELEVATION GROUND WATER                                 |                                |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 17.0'                                                                                             |       |                            |                                                                                                                   | 16. DATE HOLE STARTED 31 Aug 1978 COMPLETED 31 Aug 1978    |                                |                                                                                                                                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                                   | 17. ELEVATION TOP OF HOLE 30.0' water depth                |                                |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 17.0'                                                                                                 |       |                            |                                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING 17.4' %                 |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            |                                                                                                                   | 19. SIGNATURE OF INSPECTOR<br>R. V. O'Kelley               |                                |                                                                                                                                                                                                                                      |  |
| ELEVATION<br>MLW<br>27.9'                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                      | % CORE<br>RECOVER-<br>Y                                    | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                                                 |  |
|                                                                                                                              | 0'    |                            | SM - Gray, silty, fine sand<br>with minor shell content                                                           |                                                            | 1                              | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 5'    |                            | MH - Gray inorganic, fine<br>sandy, slightly clayey silt<br>with minor shell content.<br>Fine sand in thin lenses |                                                            | 2<br>3                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 10'   |                            | SM - Silty, fine sand with<br>moderate shell content                                                              |                                                            | 4                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15'   |                            | Slightly silty, fine to<br>medium sand with some coarse<br>sand and pebbles and very<br>minor shell content       |                                                            | 5                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | Bottom of Boring 17.4'                                                                                            |                                                            |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems.                    |                                                            |                                |                                                                                                                                                                                                                                      |  |

Hole No. 25

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                | INSTALLATION Savannah Harbor<br>Outer Channel               |                         | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion<br>Control Project                                                                     |       |                            |                                                                                                | 10. SIZE AND TYPE OF BIT 4" Casing Tube                     |                         |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X936197 Y725334                                                                      |       |                            |                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                         |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                         |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>25                                                                |       |                            |                                                                                                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN              |                         | DISTURBED 6<br>UNDISTURBED 0                                                                                                                                                                                                         |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |       |                            |                                                                                                | 14. TOTAL NUMBER CORE BOXES                                 |                         |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                | 15. ELEVATION GROUND WATER                                  |                         |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN<br>23.0'                                                                                          |       |                            |                                                                                                | 16. DATE HOLE                                               |                         | STARTED 1978 COMPLETED 1978                                                                                                                                                                                                          |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       |                            |                                                                                                | 17. ELEVATION TOP OF HOLE 30.0' water depth                 |                         |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE<br>23.0'                                                                                              |       |                            |                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING %                        |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            |                                                                                                | 19. SIGNATURE OF INSPECTOR<br>JAMES E. BOLEN, Geologist     |                         |                                                                                                                                                                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                   | % CORE<br>RECOV-<br>ERY                                     | BOX OR<br>SAMPLE<br>NO. | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)                                                                                                                                                 |  |
| -26.9 MLW                                                                                                                    | 0     |                            | SM - Black, gray, fine sand<br>slightly silty with shells<br>2%                                |                                                             | 1                       | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 5     |                            | MH - Gray fat, clayey silt<br>with fine sand lenses<br>15%                                     |                                                             | 2                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | ML - Gray, clayey silt with<br>fine sand 20%                                                   |                                                             | 3                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 10    |                            | MH - gray, fat clayey silt                                                                     |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | SC - Gray, clayey, medium -<br>fine sand                                                       |                                                             | 4                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15    |                            | SM-SC - Gray, silty, medium<br>fine sand with clay and with<br>gravel sized shells 10%         |                                                             | 5                       |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 20    |                            | SM - Gray, slightly silty,<br>medium sand with gravel sized<br>shells 15%                      |                                                             | 6                       |                                                                                                                                                                                                                                      |  |
| -40.5                                                                                                                        |       |                            | Bottom of Boring 22.6'                                                                         |                                                             |                         |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 25    |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                                                             |                         |                                                                                                                                                                                                                                      |  |

Hole No. 26

| DRILLING LOG                                                                                                                 |            | DIVISION<br>South Atlantic |                                                                                                | INSTALLATION Savannah Harbor<br>Outer Channel               |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT Tybee Island Beach Erosion<br>Control Project                                                                     |            |                            |                                                                                                | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X937625 Y723929                                                                      |            |                            |                                                                                                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                                |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                            |                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title<br>and file number) 26                                                                |            |                            |                                                                                                | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN              |                                | DISTURBED 3<br>UNDISTURBED 0                                                                                                                                                                                                         |  |
| 5. NAME OF DRILLER<br>Charles Dill                                                                                           |            |                            |                                                                                                | 14. TOTAL NUMBER CORE BOXES                                 |                                |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                            |                                                                                                | 15. ELEVATION GROUND WATER                                  |                                |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 15.5'                                                                                             |            |                            |                                                                                                | 16. DATE HOLE STARTED 1978 COMPLETED 1978                   |                                |                                                                                                                                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                            |                                                                                                | 17. ELEVATION TOP OF HOLE 42.0' water depth                 |                                |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 15.5'                                                                                                 |            |                            |                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING %                        |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |            |                            |                                                                                                | 19. SIGNATURE OF INSPECTOR<br>JAMES E. ROLEN, Geologist     |                                |                                                                                                                                                                                                                                      |  |
| ELEVATION<br>MLW<br>-40.40                                                                                                   | DEPTH<br>0 | LEGEND<br>c                | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                              | % CORE<br>RECOV-<br>ERY<br>e                                | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                                            |  |
|                                                                                                                              |            | •••••                      | SM - Gray, slightly silty,<br>coarse sand with gravel<br>sized shells 5%                       |                                                             | 1                              | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 5          | •••••                      | ML - Dark green, clayey silt<br>with fine sand 25%                                             |                                                             | 2                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 10         | •••••                      |                                                                                                |                                                             |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15         | •••••                      |                                                                                                |                                                             |                                |                                                                                                                                                                                                                                      |  |
| -60.4                                                                                                                        | 20         | •••••                      | Bottom of Boring 20.0'                                                                         |                                                             | 3                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |            |                            | NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems. |                                                             |                                |                                                                                                                                                                                                                                      |  |

[illegible]



Hole No. 28

| DRILLING LOG                                                                                                                 |       | DIVISION<br>South Atlantic |                                                                                                                 | INSTALLATION Savannah Harbor<br>Outer Channel               |                                | SHEET 1<br>OF 1 SHEETS                                                                                                                                                                                                               |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>Tybee Island Beach Erosion<br>Control Project                                                                  |       |                            |                                                                                                                 | 10. SIZE AND TYPE OF BIT 4" Casing tube                     |                                |                                                                                                                                                                                                                                      |  |
| 2. LOCATION (Coordinates or Station)<br>X940129 Y721707                                                                      |       |                            |                                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW           |                                |                                                                                                                                                                                                                                      |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |       |                            |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Alpine Vibracore |                                |                                                                                                                                                                                                                                      |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>28                                                                |       |                            |                                                                                                                 | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN              |                                | DISTURBED 4<br>UNDISTURBED 0                                                                                                                                                                                                         |  |
| 5. NAME OF DRILLER<br>CHARLES DILL                                                                                           |       |                            |                                                                                                                 | 14. TOTAL NUMBER CORE BOXES                                 |                                |                                                                                                                                                                                                                                      |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                            |                                                                                                                 | 15. ELEVATION GROUND WATER                                  |                                |                                                                                                                                                                                                                                      |  |
| 7. THICKNESS OF OVERBURDEN 17.0'                                                                                             |       |                            |                                                                                                                 | 16. DATE HOLE STARTED 1 Sep 78 COMPLETED 1 Sep 78           |                                |                                                                                                                                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                            |                                                                                                                 | 17. ELEVATION TOP OF HOLE 43.0' water depth                 |                                |                                                                                                                                                                                                                                      |  |
| 9. TOTAL DEPTH OF HOLE 17.0'                                                                                                 |       |                            |                                                                                                                 | 18. TOTAL CORE RECOVERY FOR BORING 18.2' %                  |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            |                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>R. V. O'KELLEY                |                                |                                                                                                                                                                                                                                      |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                     | CLASSIFICATION OF MATERIALS<br>(Description)                                                                    | % CORE<br>RECOV-<br>ERY                                     | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth at<br>weathering, etc., if significant)                                                                                                                                                 |  |
| MLW<br>-41.5'                                                                                                                | 0'    |                            | SM - Gray, silty, fine sand<br>with moderate shell<br>content                                                   |                                                             | 1                              | NOTE: Because of<br>expansion and compaction<br>of the core during the<br>drilling process, Bottom<br>of Boring Depth (column<br>d) may not coincide with<br>Thickness of Overburden<br>(line 7) or Total Depth<br>of Hole (line 9). |  |
|                                                                                                                              | 5'    |                            | Fine to medium with high<br>shell content                                                                       |                                                             | 2                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 10'   |                            | Moderately silty with mod-<br>erate shell content                                                               |                                                             | 3                              |                                                                                                                                                                                                                                      |  |
|                                                                                                                              | 15'   |                            | Slightly silty, medium to<br>coarse with some fine sand<br>and moderate shell content                           |                                                             | 4                              |                                                                                                                                                                                                                                      |  |
| -59.5                                                                                                                        |       |                            | Moderately silty, fine to<br>medium with some coarse<br>sand and pebbles and minor<br>to moderate shell content |                                                             |                                |                                                                                                                                                                                                                                      |  |
|                                                                                                                              |       |                            | Bottom of Boring 18.2'                                                                                          |                                                             |                                |                                                                                                                                                                                                                                      |  |
| NOTE: Soils field classified<br>in accordance with the Unified<br>Soil Classification Systems.                               |       |                            |                                                                                                                 |                                                             |                                |                                                                                                                                                                                                                                      |  |

Hole No. SH-361

| DRILLING LOG                                                                                                                 |       | INSTALLATION                                                            |                                                                                                  | SHEET 1 OF 1 SHEETS |                   |                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       | 10. SIZE AND TYPE OF BIT<br>1 1/4" SPLITSPOON, 5/8" FISHTAIL            |                                                                                                  |                     |                   |                                                                                                                                                       |
| 2. LOCATION (Coordinates or Station)<br>X-928104 Y-729183 GA. EAST                                                           |       | 11. DATUM FOR ELEVATION SHOWN (ITM or MSL)<br>MLW                       |                                                                                                  |                     |                   |                                                                                                                                                       |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                  |                                                                                                  |                     |                   |                                                                                                                                                       |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-361                                                            |       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>DISTURBED 6 UNDISTURBED 0 |                                                                                                  |                     |                   |                                                                                                                                                       |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       | 14. TOTAL NUMBER CORE BOXES<br>0                                        |                                                                                                  |                     |                   |                                                                                                                                                       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | 15. ELEVATION GROUND WATER N/A                                          |                                                                                                  |                     |                   |                                                                                                                                                       |
| 7. THICKNESS OF OVERBURDEN<br>60.4' (Water 40.9')                                                                            |       | 16. DATE HOLE<br>STARTED 21 FEB 92 COMPLETED 21 FEB 92                  |                                                                                                  |                     |                   |                                                                                                                                                       |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |       | 17. ELEVATION TOP OF HOLE<br>0.0'                                       |                                                                                                  |                     |                   |                                                                                                                                                       |
| 9. TOTAL DEPTH OF HOLE<br>60.4'                                                                                              |       | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                               |                                                                                                  |                     |                   |                                                                                                                                                       |
|                                                                                                                              |       | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                        |                                                                                                  |                     |                   |                                                                                                                                                       |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                                                                  | CLASSIFICATION OF MATERIALS<br>(Description)                                                     | % CORE RECOVERY     | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                                     |
| 0.0                                                                                                                          | 0.0   |                                                                         |                                                                                                  |                     |                   |                                                                                                                                                       |
|                                                                                                                              |       |                                                                         | Water                                                                                            |                     |                   | Scale change of 40.0'. Set 6" diameter casing by own weight to 42.0'.                                                                                 |
|                                                                                                                              |       |                                                                         | Bottom of Harbor 40.9'                                                                           |                     |                   |                                                                                                                                                       |
| -40.9'                                                                                                                       | 40    |                                                                         |                                                                                                  |                     |                   |                                                                                                                                                       |
| -42.5'                                                                                                                       | 42.5  |                                                                         | (SM) Grey & olive-grey, fine silty SAND.                                                         |                     | 1                 | Made new batch of Zeogel drilling mud at 42.4'.                                                                                                       |
|                                                                                                                              |       |                                                                         | (SC) Dark grey, fine clayey SAND. Some silt.                                                     |                     | 2                 | No spiltspoon recovery on first attempt on drive from 42.4' to 43.9'. Redrove to 43.9' then cont'd. drive to 45.4'. Jar sample 2 from 42.4' to 45.4'. |
| -45.4'                                                                                                                       | 45    |                                                                         | (CH) Dark grey, fat CLAY. Trace of silt.                                                         |                     | 3                 | No recovery on first attempt from 51.4' to 52.9'. Redrove to 52.9' then cont'd. drive to 54.4'. Jar sample 3 from 51.4' to 54.4'.                     |
|                                                                                                                              |       |                                                                         |                                                                                                  |                     | 4                 |                                                                                                                                                       |
| -51.4'                                                                                                                       | 50    |                                                                         |                                                                                                  |                     |                   |                                                                                                                                                       |
|                                                                                                                              |       |                                                                         | (SC) Dark grey fine to medium clayey SAND. Some small to large shell fragments.                  |                     | 5                 |                                                                                                                                                       |
|                                                                                                                              | 55    |                                                                         |                                                                                                  |                     |                   |                                                                                                                                                       |
| -58.9'                                                                                                                       | 58.9  |                                                                         |                                                                                                  |                     |                   |                                                                                                                                                       |
| -60.4'                                                                                                                       | 60    |                                                                         | (SM) Dark grey, fine, silty SAND. Trace of clay & small shell fragments.                         |                     | 6                 |                                                                                                                                                       |
|                                                                                                                              |       |                                                                         | Bottom of Boring 60.4'                                                                           |                     |                   |                                                                                                                                                       |
|                                                                                                                              |       |                                                                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                     |                   |                                                                                                                                                       |
|                                                                                                                              |       |                                                                         |                                                                                                  |                     |                   | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. spiltspoon w/140 lb. hammer falling 30"                                                       |

|                                                                                                                               |  |                           |  |                                                                   |  |                                               |  |                                   |  |
|-------------------------------------------------------------------------------------------------------------------------------|--|---------------------------|--|-------------------------------------------------------------------|--|-----------------------------------------------|--|-----------------------------------|--|
| DRILLING LOG                                                                                                                  |  | DIV <b>South Atlantic</b> |  | INSTALLATION <b>Savannah, Ga.</b>                                 |  | FIELD NO. <b>011</b>                          |  | SHEET <b>1</b> OF <b>1</b> SHEETS |  |
| 1. PROJECT <b>Savannah Harbor Deepening</b>                                                                                   |  |                           |  | 10. SIZE AND TYPE OF BIT <b>3/8" I.D. Spitspoon,</b>              |  |                                               |  |                                   |  |
| 2. LOCATION (Coordinates or Station) <b>UTM X-520898.53 Y-3539342.23</b>                                                      |  |                           |  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <b>5 1/2" Fishtail</b> |  |                                               |  |                                   |  |
| 3. DRILLING AGENCY <b>Savannah District</b>                                                                                   |  |                           |  | 12. MANUFACTURER'S DESIGNATION OF DRILL <b>Failing-314</b>        |  |                                               |  |                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number) <b>EH-365</b>                                                         |  |                           |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN <b>6</b>               |  | DISTURBED <b>0</b>                            |  | UNDISTURBED                       |  |
| 5. NAME OF DRILLER <b>D. Justiss</b>                                                                                          |  |                           |  | 14. TOTAL NUMBER CORE BOXES <b>0</b>                              |  | ELEVATION GROUND WATER <b>N/A</b>             |  |                                   |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED <b>DES. FROM VERT.</b> |  |                           |  | 15. DATE HOLE <b>STARTED MAR 7 1992</b>                           |  | <b>COMPLETED MAR 7 1992</b>                   |  |                                   |  |
| 7. THICKNESS OF OVERBURDEN <b>60.0' (Water 43.5')</b>                                                                         |  |                           |  | 16. ELEVATION TOP OF HOLE <b>0.0</b>                              |  | 17. TOTAL CORE RECOVERY FOR BORING <b>N/A</b> |  |                                   |  |
| 8. DEPTH DRILLED INTO ROCK <b>0.0</b>                                                                                         |  |                           |  | 18. SIGNATURE OF INSPECTOR <b>J. ARTHUR</b>                       |  |                                               |  |                                   |  |
| 9. TOTAL DEPTH OF HOLE <b>60.0'</b>                                                                                           |  |                           |  |                                                                   |  |                                               |  |                                   |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                                                                       | SCORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |  |
|-----------|-------|--------|-----------------------------------------------------------------------------------------------------------------|----------------|-------------------|--------------------------------------------------------------------------------|--|
|           |       |        | <b>WATER</b>                                                                                                    |                |                   | <b>SCALE CHANGE AT 40.0'. SET 6" DIAMETER CASING BY AWH HEIGHT TO 44.6'.</b>   |  |
|           |       |        | <b>BOTTOM OF HARDEN 43.5'</b>                                                                                   |                |                   |                                                                                |  |
|           |       |        | <b>(SM) DARK GRAY FINE SILTY SAND.</b>                                                                          |                |                   |                                                                                |  |
|           |       |        | <b>GRAY, FINE TO MEDIUM SAND, TRACE OF SMALL SHELL FRAGMENTS. SOME SMALL SHELL FRAGMENTS &amp; FINE GRAVEL.</b> |                |                   |                                                                                |  |
|           |       |        | <b>NO WOOD OR GRAVEL, TRACE OF SMALL SHELL FRAGMENTS. MEDIUM TO COARSE SAND.</b>                                |                |                   |                                                                                |  |
|           |       |        | <b>FINE TO MEDIUM SAND, TRACE OF CLAY.</b>                                                                      |                |                   |                                                                                |  |
|           |       |        | <b>(SG) GRAY MEDIUM CLAY (SAND) SOME SMALL SHELL FRAGMENTS.</b>                                                 |                |                   |                                                                                |  |
|           |       |        | <b>(SM) LIGHT GRAY FINE TO MEDIUM SILTY SAND, SOME SMALL SHELL FRAGMENTS.</b>                                   |                |                   |                                                                                |  |
|           |       |        | <b>MEDIUM TO COARSE SAND</b>                                                                                    |                |                   |                                                                                |  |
|           |       |        | <b>BOTTOM OF BORING 60.0'</b>                                                                                   |                |                   |                                                                                |  |

**NOTE:** Soils field classification in accordance with the Unified Soil Classification System

**BLOWS PER FOOT:**

Number required to drive 1 3/8" I.D. spitspoon w/140 lb hammer falling 30".

Hole No. SH-367

|                                                                                                                           |       |                      |                                                                       |                                                                                                 |                   |                                                                               |  |
|---------------------------------------------------------------------------------------------------------------------------|-------|----------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------|--|
| DRILLING LOG                                                                                                              |       | 0' "N SOUTH ATLANTIC |                                                                       | INSTALLATION SAVANNAH, GA.                                                                      |                   | SHEET 1 OF 1 SHEETS                                                           |  |
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |       |                      |                                                                       | 10. SIZE AND TYPE OF BIT 1 3/4"spitspoon, 5/2"fish tail                                         |                   |                                                                               |  |
| 2. LOCATION (Coordinates or Station) X=932387 Y=726387 GA. EAST                                                           |       |                      |                                                                       | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW                                                  |                   |                                                                               |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |       |                      |                                                                       | 12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314                                             |                   |                                                                               |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-367                                                            |       |                      |                                                                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 2                                                    |                   | DISTURBED 0 UNDISTURBED 0                                                     |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |       |                      |                                                                       | 14. TOTAL NUMBER CORE BOXES 0                                                                   |                   |                                                                               |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                      |                                                                       | 15. ELEVATION GROUND WATER N/A                                                                  |                   |                                                                               |  |
| 7. THICKNESS OF OVERBURDEN 46.7' (WATER 40.7')                                                                            |       |                      |                                                                       | 16. DATE HOLE STARTED 24 FEB 92                                                                 |                   | COMPLETED 24 FEB 92                                                           |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |       |                      |                                                                       | 17. ELEVATION TOP OF HOLE 0.0'                                                                  |                   |                                                                               |  |
| 9. TOTAL DEPTH OF HOLE 46.7'                                                                                              |       |                      |                                                                       | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                        |                   |                                                                               |  |
|                                                                                                                           |       |                      |                                                                       | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.C.                                                   |                   |                                                                               |  |
| ELEVATION                                                                                                                 | DEPTH | LEGEND               | CLASSIFICATION OF MATERIALS (Description)                             | % CORE RECOVERY                                                                                 | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) |  |
| 0.0                                                                                                                       | 0     |                      |                                                                       |                                                                                                 |                   | BLOWS                                                                         |  |
|                                                                                                                           | 35    |                      | Water                                                                 |                                                                                                 |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 46.7'.      |  |
|                                                                                                                           | 40    |                      | Bottom of Harbor 40.7'                                                |                                                                                                 |                   |                                                                               |  |
| -40.7'                                                                                                                    |       |                      | (SM) Gray fine silty SAND.                                            |                                                                                                 | 1                 | Began using Zeogel drilling mud at 42.2'.<br>21                               |  |
| -42.2'                                                                                                                    |       |                      | Light gray, fine to medium sand, some small to large shell fragments. |                                                                                                 |                   | Note: Boring terminated at 46.7' due to shipping traffic and heavy fog.<br>18 |  |
| -45.2'                                                                                                                    | 45    |                      | Trace of small shell fragments.                                       |                                                                                                 | 2                 | 24                                                                            |  |
| -46.7'                                                                                                                    |       |                      | Bottom of Boring 46.7'                                                |                                                                                                 |                   | 20                                                                            |  |
|                                                                                                                           | 50    |                      |                                                                       |                                                                                                 |                   |                                                                               |  |
|                                                                                                                           | 55    |                      |                                                                       |                                                                                                 |                   |                                                                               |  |
|                                                                                                                           | 60    |                      |                                                                       |                                                                                                 |                   |                                                                               |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                          |       |                      |                                                                       | BLOWS PER FOOT:<br>Number required to drive 1 3/4" I.D. spitspoon w/140 lb. hammer falling 30". |                   |                                                                               |  |

Hole No. SH-367A

| DRILLING LOG                                                                                                                 |       | 0° 30' SOUTH ATLANTIC |                                                                                                                 | INSTALLATION SAVANNAH, GA.                                                                       |                   | SHEET 1 OF 1 SHEETS                                                                                                                     |  |
|------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |       |                       |                                                                                                                 | 10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5 1/2" fishtail                                      |                   |                                                                                                                                         |  |
| 2. LOCATION (Coordinates or Station)<br>X-932393 Y-726375 GA. EAST                                                           |       |                       |                                                                                                                 | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW                                                |                   |                                                                                                                                         |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |       |                       |                                                                                                                 | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>FALLING 314                                           |                   |                                                                                                                                         |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-367A                                                           |       |                       |                                                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                       |                   | DISTURBED : 3 UNDISTURBED : 0                                                                                                           |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |       |                       |                                                                                                                 | 14. TOTAL NUMBER CORE BOXES 0                                                                    |                   |                                                                                                                                         |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       |                       |                                                                                                                 | 15. ELEVATION GROUND WATER N/A                                                                   |                   |                                                                                                                                         |  |
| 7. THICKNESS OF OVERBURDEN 59.5' (WATER 40.9')                                                                               |       |                       |                                                                                                                 | 16. DATE HOLE                                                                                    |                   | STARTED : 25 FEB 92 COMPLETED : 25 FEB 92                                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |       |                       |                                                                                                                 | 17. ELEVATION TOP OF HOLE 0.0'                                                                   |                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                                                                                                  |  |
| 9. TOTAL DEPTH OF HOLE 59.5'                                                                                                 |       |                       |                                                                                                                 | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                   |                                                                                                                                         |  |
| ELEVATION                                                                                                                    | DEPTH | LEGEND                | CLASSIFICATION OF MATERIALS<br>(Description)                                                                    | % CORE RECOVERY                                                                                  | BOX OR SAMPLE NO. | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)                                                       |  |
| 0.0                                                                                                                          | 0.0   |                       |                                                                                                                 |                                                                                                  |                   | BLOWS                                                                                                                                   |  |
|                                                                                                                              | 20    |                       | Water                                                                                                           |                                                                                                  |                   | Scale change at 40.0'.<br>Set 6" diameter casing by own weight to 41.2'.                                                                |  |
|                                                                                                                              | 38    |                       |                                                                                                                 |                                                                                                  |                   |                                                                                                                                         |  |
|                                                                                                                              | 40    |                       | Bottom of Harbor 40.9'                                                                                          |                                                                                                  |                   |                                                                                                                                         |  |
|                                                                                                                              | 45    |                       | Wash                                                                                                            |                                                                                                  |                   | 40.9'-46.0':<br>See companion log SH-367 for description. Began using Zeagel drilling mud at 40.9'. Cleaned out to 46.0' with fishtail. |  |
|                                                                                                                              | 46.0  |                       | Bottom of Wash 46.0'                                                                                            |                                                                                                  |                   |                                                                                                                                         |  |
|                                                                                                                              | 47.5  |                       | (SM) Light gray fine to medium silty SAND, some small shell fragments.<br>Gray, trace of small shell fragments. |                                                                                                  | 1                 | Began splitspooning at 46.0'. 26                                                                                                        |  |
|                                                                                                                              | 50    |                       |                                                                                                                 |                                                                                                  |                   | 20                                                                                                                                      |  |
|                                                                                                                              | 52.0  |                       | Light gray, medium sand.                                                                                        |                                                                                                  | 2                 | 14                                                                                                                                      |  |
|                                                                                                                              | 53.5  |                       | Medium to coarse sand.                                                                                          |                                                                                                  |                   | 18                                                                                                                                      |  |
|                                                                                                                              | 55.0  |                       | Gray, fine to medium sand.                                                                                      |                                                                                                  |                   | 31                                                                                                                                      |  |
|                                                                                                                              | 58.0  |                       |                                                                                                                 |                                                                                                  |                   | 30                                                                                                                                      |  |
|                                                                                                                              | 59.5  |                       | Some small shell fragments, trace of clay.                                                                      |                                                                                                  | 3                 | 12                                                                                                                                      |  |
|                                                                                                                              | 60    |                       | Bottom of Boring 59.5'                                                                                          |                                                                                                  |                   | 14                                                                                                                                      |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |       |                       |                                                                                                                 | BLOWS PER FOOT:<br>Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30". |                   |                                                                                                                                         |  |

Hole No. SH-368

|                                                                                                                           |             |                                              |                                                                                                      |                                                             |                                |                                                                                                   |  |
|---------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|--|
| DRILLING LOG                                                                                                              |             | D <sup>1</sup> <sup>10N</sup> SOUTH ATLANTIC |                                                                                                      | INSTALLATION SAVANNAH, GA.                                  |                                | SHEET 1 OF 1 SHEETS                                                                               |  |
| 1. PROJECT SAVANNAH HARBOR DEEPENING                                                                                      |             |                                              |                                                                                                      | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5 1/2" FISHTAIL |                                |                                                                                                   |  |
| 2. LOCATION (Coordinates or Station) X-932930 Y-725430 GA. EAST                                                           |             |                                              |                                                                                                      | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW              |                                |                                                                                                   |  |
| 3. DRILLING AGENCY SAVANNAH DISTRICT                                                                                      |             |                                              |                                                                                                      | 12. MANUFACTURER'S DESIGNATION OF DRILL Folling 314         |                                |                                                                                                   |  |
| 4. HOLE NO. (As shown on drawing title and file number) SH-368                                                            |             |                                              |                                                                                                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 5                |                                | DISTURBED 0 UNDISTURBED 0                                                                         |  |
| 5. NAME OF DRILLER DAVID JUSTISS                                                                                          |             |                                              |                                                                                                      | 14. TOTAL NUMBER CORE BOXES 0                               |                                |                                                                                                   |  |
| 6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |             |                                              |                                                                                                      | 15. ELEVATION GROUND WATER N/A                              |                                |                                                                                                   |  |
| 7. THICKNESS OF OVERBURDEN 61.0' (Water 43.0')                                                                            |             |                                              |                                                                                                      | 16. DATE HOLE STARTED 21 FEB 92                             |                                | COMPLETED 21 FEB 92                                                                               |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                           |             |                                              |                                                                                                      | 17. ELEVATION TOP OF HOLE 0.0'                              |                                |                                                                                                   |  |
| 9. TOTAL DEPTH OF HOLE 61.0'                                                                                              |             |                                              |                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING N/A                      |                                |                                                                                                   |  |
|                                                                                                                           |             |                                              |                                                                                                      | 19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.               |                                |                                                                                                   |  |
| ELEVATION<br>0.0'                                                                                                         | DEPTH<br>0' | LEGEND<br>c                                  | CLASSIFICATION OF MATERIALS<br>(Description)<br>e                                                    | % CORE<br>RECOV-<br>ERY<br>a                                | BOX OR<br>SAMPLE<br>NO.<br>JAR | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         |  |
|                                                                                                                           |             |                                              | Water                                                                                                |                                                             |                                | Scale change at 40.0'. Set 6" diameter casing by own weight to 44.4'.                             |  |
|                                                                                                                           |             |                                              | Bottom of Harbor 43.0'                                                                               |                                                             |                                |                                                                                                   |  |
| -43.0'                                                                                                                    |             |                                              | (SM) Grey, fine silty SAND. Some small to large shell fragments.                                     |                                                             | 1                              | 8                                                                                                 |  |
| -46.0'                                                                                                                    |             |                                              | Trace of small shell fragments.                                                                      |                                                             |                                | Weight of rods drove splitspoon from 43.0' to 44.0'. Began using Zeagel drilling mud at 44.5'. 28 |  |
| -49.0'                                                                                                                    |             |                                              | Some fine gravel & small to large shell fragments.                                                   |                                                             | 2                              | 28                                                                                                |  |
| -50.5'                                                                                                                    |             |                                              | No gravel, trace of small shell fragments.                                                           |                                                             |                                | 28                                                                                                |  |
| -52.0'                                                                                                                    |             |                                              | (SP) Grey, fine, poorly graded SAND. Trace of silt.                                                  |                                                             | 3                              | 29                                                                                                |  |
| -55.0'                                                                                                                    |             |                                              | (SM) Grey, medium to coarse silty SAND. Trace of fine gravel & small to large shell fragments.       |                                                             | 4                              | 24                                                                                                |  |
| -58.0'                                                                                                                    |             |                                              | Fine to medium sand.                                                                                 |                                                             |                                | 18                                                                                                |  |
| -59.8'                                                                                                                    |             |                                              | (SP) Grey, fine to medium, poorly graded SAND. Trace of silt, small shell fragments & coarse gravel. |                                                             | 5                              | 20                                                                                                |  |
| -61.0'                                                                                                                    |             |                                              | Bottom of Boring 61.0'                                                                               |                                                             |                                | 19                                                                                                |  |
|                                                                                                                           |             |                                              | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.     |                                                             |                                | 28                                                                                                |  |
|                                                                                                                           |             |                                              |                                                                                                      |                                                             |                                | 31                                                                                                |  |
|                                                                                                                           |             |                                              |                                                                                                      |                                                             |                                | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".  |  |

Hole No. SH- 373

| DRILLING LOG                                                                           |       | DIVISION                                                                                             | INSTALLATION                                                                                                   |                                                                                              | SHEET             |                                                                                                                                                |
|----------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| PROJECT                                                                                |       | South Atlantic                                                                                       | Savannah, Ga.                                                                                                  |                                                                                              | 1 OF 1 SHEETS     |                                                                                                                                                |
| 1. PROJECT                                                                             |       | Savannah Harbor Deepening                                                                            |                                                                                                                | 10. SIZE AND TYPE OF BIT                                                                     |                   | 1 3/8" ID Splitspoon                                                                                                                           |
| 2. LOCATION (Coordinates or Station)                                                   |       | UTM, X- 523009.46, Y- 3538226.61                                                                     |                                                                                                                | 11. DATUM FOR ELEVATION SHOWN (FMS L.M.S.)                                                   |                   | MLW                                                                                                                                            |
| 3. DRILLING AGENCY                                                                     |       | Savannah District                                                                                    |                                                                                                                | 12. MANUFACTURER'S DESIGNATION OF DRILL                                                      |                   | 5 1/2" Fichtall                                                                                                                                |
| 4. HOLE NO. (As shown on drawing title and life number)                                |       | SH- 373                                                                                              |                                                                                                                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                   |                   | 6                                                                                                                                              |
| 5. NAME OF DRILLER                                                                     |       | D. Justiss                                                                                           |                                                                                                                | 14. TOTAL NUMBER CORE BOXES                                                                  |                   | 0                                                                                                                                              |
| 6. DIRECTION OF HOLE                                                                   |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                                | 15. ELEVATION GROUND WATER                                                                   |                   | N/A                                                                                                                                            |
| 7. THICKNESS OF OVERBURDEN                                                             |       | 60.8' (Water 44.3')                                                                                  |                                                                                                                | 16. DATE HOLE                                                                                |                   | STARTED MAR 7 1992 COMPLETED MAR 7 1992                                                                                                        |
| 8. DEPTH DRILLED INTO ROCK                                                             |       | 0.0'                                                                                                 |                                                                                                                | 17. ELEVATION TOP OF HOLE                                                                    |                   | 0.0'                                                                                                                                           |
| 9. TOTAL DEPTH OF HOLE                                                                 |       | 60.8'                                                                                                |                                                                                                                | 18. TOTAL CORE RECOVERY FOR BORING                                                           |                   | N/A                                                                                                                                            |
|                                                                                        |       |                                                                                                      |                                                                                                                | 19. SIGNATURE OF INSPECTOR                                                                   |                   | PG. J. ARTHUR                                                                                                                                  |
| ELEVATION                                                                              | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                      | % CORE RECOVERY                                                                              | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                                                 |
|                                                                                        |       |                                                                                                      | WATER                                                                                                          |                                                                                              |                   | SCALE CHANGE AT 44.0'. SET 6" DIAMETER CASING BY OWN. WEIGHT TO 47.1.                                                                          |
|                                                                                        | 40    |                                                                                                      |                                                                                                                |                                                                                              |                   |                                                                                                                                                |
| -44.3'                                                                                 | 45    |                                                                                                      | BOTTOM OF HARDEN 44.3'                                                                                         |                                                                                              | JAWS              | Blows                                                                                                                                          |
| -45.8'                                                                                 |       |                                                                                                      | (SP) GRAYISH BROWN MEDIUM TO COARSE POORLY GRADED SAND, SOME SMALL SHELL FRAGMENTS, TRACE OF FINE GRAVEL SILT. |                                                                                              | 1                 | WEIGHT OF RODS DRIVE SPLITSPLOON FROM 44.3' TO 44.8',                                                                                          |
|                                                                                        |       |                                                                                                      | (SM) DARK GRAY FINE TO MEDIUM SILT SAND, TRACE OF SMALL SHELL FRAGMENTS.                                       |                                                                                              | 2                 | BEGAN USING ZOGEL DRILLING MUD AT 47.3'                                                                                                        |
| -48.8'                                                                                 | 50    |                                                                                                      | (SP) GRAY FINE TO MEDIUM GRADED QUARTZ GRAVEL, SHELL, SOME FINE TO COARSE SAND, TRACE OF SILT.                 |                                                                                              | 3                 | NO SPLITSPLOON THROUGH ON FIRST DRIVE FROM 48.8' TO 50.2', RE-DRIVE TO 50.2' THEN CONT'D WITH DRIVE TO 51.8'. JAW SAMPLE #3 FROM 48.8 TO 51.8' |
| -51.8'                                                                                 |       |                                                                                                      | (CH) GRAY FAT CLAY.                                                                                            |                                                                                              | 4                 |                                                                                                                                                |
|                                                                                        | 55    |                                                                                                      |                                                                                                                |                                                                                              | 5                 |                                                                                                                                                |
| -59.3'                                                                                 | 60    |                                                                                                      | (SC) OLIVE FINE CLAYEY SAND, SOME SILT.                                                                        |                                                                                              | 6                 |                                                                                                                                                |
| -60.8'                                                                                 |       |                                                                                                      | BOTTOM OF BORING 60.8'                                                                                         |                                                                                              |                   |                                                                                                                                                |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System |       |                                                                                                      |                                                                                                                | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb hammer falling 30" |                   |                                                                                                                                                |

Hole No. SH-374

| DRILLING LOG                                                                                                                 |              | DIRECTION<br>SOUTH ATLANTIC | INSTALLATION<br>SAVANNAH, GA.                                                                    |                                | SHEET 1<br>OF 1 SHEETS       |                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |              |                             | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/2" FISHTAIL                                     |                                |                              |                                                                                                   |
| 2. LOCATION (Coordinates or Station)<br>X-938464 Y-723217 GA. EAST                                                           |              |                             | 11. DATUM FOR ELEVATION SHOWN (TBM or NSL)<br>MLW                                                |                                |                              |                                                                                                   |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |              |                             | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                                |                              |                                                                                                   |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-374                                                            |              |                             | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN<br>6                                                  |                                | DISTURBED<br>0               |                                                                                                   |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |              |                             | 14. TOTAL NUMBER CORE BOXES<br>0                                                                 |                                | UNDISTURBED<br>0             |                                                                                                   |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |              |                             | 15. ELEVATION GROUND WATER<br>N/A                                                                |                                |                              |                                                                                                   |
| 7. THICKNESS OF OVERBURDEN<br>60.7' (Water 42.7')                                                                            |              |                             | 16. DATE HOLE<br>20 FEB 92                                                                       |                                | STARTED<br>20 FEB 92         |                                                                                                   |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |              |                             | 17. ELEVATION TOP OF HOLE<br>0.0'                                                                |                                | COMPLETED<br>20 FEB 92       |                                                                                                   |
| 9. TOTAL DEPTH OF HOLE<br>60.7'                                                                                              |              |                             | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                        |                                | X                            |                                                                                                   |
|                                                                                                                              |              |                             | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                                |                              |                                                                                                   |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0.0 | LEGEND<br>c                 | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOVER-<br>ERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g         |
|                                                                                                                              |              |                             | Water                                                                                            |                                |                              |                                                                                                   |
|                                                                                                                              | 40           |                             | Bottom of Harbor 42.7'                                                                           |                                |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 43.7'.                             |
| -42.7'                                                                                                                       | 45           |                             | (SM) Dark grey, fine, silty SAND.                                                                |                                | 1                            | No recovery on first split spoon drive. 11                                                        |
| -45.7'                                                                                                                       |              |                             | Fine to medium sand, trace of small to large shell fragments.                                    |                                |                              | Redrove first drive to 44.2' then                                                                 |
| -47.2'                                                                                                                       |              |                             | (GP) Grey, fine poorly graded GRAVEL. Trace of silt, fine sand & small to large shell fragments. |                                | 2                            | continued drive to 45.7'. 12                                                                      |
| -48.7'                                                                                                                       | 50           |                             | (SM) Grey, fine to medium, silty SAND. Trace of small shell fragments.                           |                                | 3                            | 19                                                                                                |
| -51.7'                                                                                                                       | 55           |                             | (CH) Dark grey, fat CLAY. Trace of silt.                                                         |                                | 4                            | 8                                                                                                 |
|                                                                                                                              |              |                             |                                                                                                  |                                | 5                            | 25                                                                                                |
|                                                                                                                              | 60           |                             |                                                                                                  |                                | 6                            | 6                                                                                                 |
| -60.7'                                                                                                                       |              |                             | Bottom of Boring 60.7'                                                                           |                                |                              | 27                                                                                                |
|                                                                                                                              |              |                             | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                |                              | 13                                                                                                |
|                                                                                                                              |              |                             |                                                                                                  |                                |                              | 14                                                                                                |
|                                                                                                                              |              |                             |                                                                                                  |                                |                              | 15                                                                                                |
|                                                                                                                              |              |                             |                                                                                                  |                                |                              | 19                                                                                                |
|                                                                                                                              |              |                             |                                                                                                  |                                |                              | 17                                                                                                |
|                                                                                                                              |              |                             |                                                                                                  |                                |                              | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. split spoon w/140 lb. hammer falling 30". |



Hole No. SH-378

| DRILLING LOG                                                                                                                 |            | ON SOUTH ATLANTIC |                                                                                                     | INSTALLATION SAVANNAH, GA.                                                                       |                              | SHEET 1 OF 1 SHEETS                                                                      |       |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------|-------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |            |                   |                                                                                                     | 10. SIZE AND TYPE OF BIT 1 1/2" SPLITSPOON, 5/8" FISHTAIL                                        |                              |                                                                                          |       |  |
| 2. LOCATION (Coordinates or Station)<br>X=941788 Y=720844 GA. EAST                                                           |            |                   |                                                                                                     | 11. DATUM FOR ELEVATION SHOWN (ITM or MSL)<br>MLW                                                |                              |                                                                                          |       |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |            |                   |                                                                                                     | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314                                           |                              |                                                                                          |       |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-378                                                            |            |                   |                                                                                                     | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 5 : 0                                               |                              |                                                                                          |       |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |            |                   |                                                                                                     | 14. TOTAL NUMBER CORE BOXES 0                                                                    |                              |                                                                                          |       |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                   |                                                                                                     | 15. ELEVATION GROUND WATER N/A                                                                   |                              |                                                                                          |       |  |
| 7. THICKNESS OF OVERBURDEN 60.8' (Water 44.3')                                                                               |            |                   |                                                                                                     | 16. DATE HOLE : STARTED : 7 DEC 91 : COMPLETED : 7 DEC 91                                        |                              |                                                                                          |       |  |
| 8. DEPTH DRILLED INTO ROCK 0.0'                                                                                              |            |                   |                                                                                                     | 17. ELEVATION TOP OF HOLE 0.0'                                                                   |                              |                                                                                          |       |  |
| 9. TOTAL DEPTH OF HOLE 60.8'                                                                                                 |            |                   |                                                                                                     | 18. TOTAL CORE RECOVERY FOR BORING N/A %                                                         |                              |                                                                                          |       |  |
|                                                                                                                              |            |                   |                                                                                                     | 19. SIGNATURE OF INSPECTOR<br>JAMES ARTHUR, P.G.                                                 |                              |                                                                                          |       |  |
| ELEVATION<br>0.0                                                                                                             | DEPTH<br>0 | LEGEND<br>c       | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                   | % CORE<br>RECOVER-<br>ERY<br>e                                                                   | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc. if significant)<br>g | BLOWS |  |
|                                                                                                                              | 40         |                   | Water                                                                                               |                                                                                                  |                              | Scale change at 40.0'. Set 6" diameter casing by own weight to 46.0'.                    |       |  |
|                                                                                                                              | 44.3'      |                   | Bottom of Harbor 44.3'                                                                              |                                                                                                  |                              |                                                                                          |       |  |
|                                                                                                                              | 45         |                   | (SM) Tannish grey, fine to medium, silty SAND. Trace of clay & small shell fragments.               |                                                                                                  | 1                            | Made batch of Zeagel drilling mud at 48.8'. Reset casing to 49.0'.                       | 16    |  |
|                                                                                                                              | 48.8'      |                   |                                                                                                     |                                                                                                  |                              |                                                                                          | 21    |  |
|                                                                                                                              | 50.3'      |                   | (SP) Light grey, medium to coarse, poorly graded SAND. Large amount of shell fragments (Shell bed). |                                                                                                  | 2                            |                                                                                          | 27    |  |
|                                                                                                                              | 51.8'      |                   | (SC) Olive-grey, clayey fine SAND. Some shell fragments.                                            |                                                                                                  | 3                            |                                                                                          | 11    |  |
|                                                                                                                              | 53.3'      |                   | Some silt, trace of shell fragments.                                                                |                                                                                                  |                              |                                                                                          | 17    |  |
|                                                                                                                              | 54.8'      |                   | No shell fragments.                                                                                 |                                                                                                  |                              |                                                                                          | 18    |  |
|                                                                                                                              | 55         |                   |                                                                                                     |                                                                                                  | 4                            |                                                                                          | 13    |  |
|                                                                                                                              | 60         |                   | Light olive-grey.                                                                                   |                                                                                                  |                              |                                                                                          | 6     |  |
|                                                                                                                              | 60.8'      |                   |                                                                                                     |                                                                                                  | 5                            |                                                                                          | 6     |  |
|                                                                                                                              |            |                   | Bottom of Boring 60.8'                                                                              |                                                                                                  |                              |                                                                                          | 8     |  |
|                                                                                                                              |            |                   |                                                                                                     |                                                                                                  |                              |                                                                                          | 7     |  |
| NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.                             |            |                   |                                                                                                     | BLOWS PER FOOT:<br>Number required to drive 1 1/4" I.D. splitspoon w/140 lb. hammer falling 30". |                              |                                                                                          |       |  |

Hole No. SH- 379

| DRILLING LOG                                                                                                                 |            | DIV         | South Atlantic                                                        |                      | INSTALLATION                                               |                                                                                                                                                                                                      | Savannah, Ga.         |  | SHEET 1 OF 1 SHEETS     |  |  |
|------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-----------------------------------------------------------------------|----------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--|-------------------------|--|--|
| 1. PROJECT<br>Savannah Harbor Deepening                                                                                      |            |             |                                                                       |                      | 10. SIZE AND TYPE OF BIT<br>1 3/8" ID Splitspoon           |                                                                                                                                                                                                      |                       |  |                         |  |  |
| 2. LOCATION (Coordinates or Station)<br>UTM X-524682.71, Y-3537332.29                                                        |            |             |                                                                       |                      | 11. DATUM FOR ELEVATION MEASUREMENT<br>MLW 5 1/2" Fishtail |                                                                                                                                                                                                      |                       |  |                         |  |  |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |             |                                                                       |                      | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling-314     |                                                                                                                                                                                                      |                       |  |                         |  |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH- 379                                                           |            |             |                                                                       |                      | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                 |                                                                                                                                                                                                      | DISTURBED<br>5        |  | UNDISTURBED<br>0        |  |  |
| 5. NAME OF DRILLER<br>D. Justiss                                                                                             |            |             |                                                                       |                      | 14. TOTAL NUMBER CORE BOXES                                |                                                                                                                                                                                                      | 0                     |  |                         |  |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |             |                                                                       |                      | 15. ELEVATION GROUND WATER                                 |                                                                                                                                                                                                      | N/A                   |  |                         |  |  |
| 7. THICKNESS OF OVERBURDEN<br>59.9' (Water 43.4')                                                                            |            |             |                                                                       |                      | 16. DATE HOLE                                              |                                                                                                                                                                                                      | STARTED<br>MAR 6 1992 |  | COMPLETED<br>MAR 6 1992 |  |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |            |             |                                                                       |                      | 17. ELEVATION TOP OF HOLE                                  |                                                                                                                                                                                                      | 0.0'                  |  |                         |  |  |
| 9. TOTAL DEPTH OF HOLE<br>59.9'                                                                                              |            |             |                                                                       |                      | 18. TOTAL CORE RECOVERY FOR BORING                         |                                                                                                                                                                                                      | N/A                   |  |                         |  |  |
|                                                                                                                              |            |             |                                                                       |                      | 19. SIGNATURE OF INSPECTOR                                 |                                                                                                                                                                                                      | J. ARTHUR             |  |                         |  |  |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                     | % CORE RECOVERY<br>e | BOX OR SAMPLE NO.<br>f                                     | REMARKS<br>(Drilling time, water loss, depth of weathering, etc., if significant)<br>g                                                                                                               |                       |  |                         |  |  |
|                                                                                                                              | 0          |             | WATER                                                                 |                      |                                                            | SCALE CHANGE AT 40.0'. SET 6" CASING BY OWN WEIGHT TO 45.3'. BEGAN USING ZEPHOL DRILLING MUD AT 43.4'.                                                                                               |                       |  |                         |  |  |
| -43.4'                                                                                                                       | 40         |             | BOTTOM OF HARBOR 43.4'                                                |                      | JARS                                                       | Blows                                                                                                                                                                                                |                       |  |                         |  |  |
| -46.4'                                                                                                                       | 45         |             | (SM) DARK GRAY FINE TO MEDIUM SILTY SAND, SOME SMALL SHELL FRAGMENTS. |                      | 1                                                          | POOR SAMPLE RECOVERY FROM 52.4' TO 53.9'. NO SAMPLE RECOVERY ON FIRST DRIVE FROM 53.9' TO 55.4'. REDRILL TO 55.4' THEN CONTINUED WITH DRIVE TO 56.9'. HAD CHANGE OF MATERIAL AT APPROXIMATELY 55.4'. |                       |  |                         |  |  |
| -47.9'                                                                                                                       |            |             | TRACE OF FINE QUARTZ GRAVEL.                                          |                      |                                                            |                                                                                                                                                                                                      |                       |  |                         |  |  |
|                                                                                                                              |            |             | NO GRAVEL.                                                            |                      | 2                                                          |                                                                                                                                                                                                      |                       |  |                         |  |  |
| -50.9'                                                                                                                       | 50         |             | TRACE OF FINE QUARTZ GRAVEL.                                          |                      |                                                            |                                                                                                                                                                                                      |                       |  |                         |  |  |
| -52.4'                                                                                                                       |            |             | LARGE AMOUNT OF SMALL SHELL FRAGMENTS. (SEE REMARKS)                  |                      |                                                            |                                                                                                                                                                                                      |                       |  |                         |  |  |
| -53.9'                                                                                                                       |            |             | MOSTLY SMALL SHELL FRAGMENTS SOME FINE GRAVEL. (SEE REMARKS)          |                      | 3                                                          | ONE HAMMER BLOW DROVE SPLITSPOON FROM APPROXIMATELY 57.9' TO 58.7'. CONT'D DRIVE TO 59.9'. JAR SAMPLE 15' FROM 56.9' TO 59.9'.                                                                       |                       |  |                         |  |  |
| -55.4'                                                                                                                       | 55         |             | (SC) OLIVE FINE CLAYBY SAND.                                          |                      | 4                                                          |                                                                                                                                                                                                      |                       |  |                         |  |  |
|                                                                                                                              |            |             |                                                                       |                      | 5                                                          |                                                                                                                                                                                                      |                       |  |                         |  |  |
| -59.9'                                                                                                                       | 60         |             | BOTTOM OF BORING 59.9'                                                |                      |                                                            |                                                                                                                                                                                                      |                       |  |                         |  |  |
| NOTE: Soils field classified in accordance with the Unified Soil Classification System                                       |            |             |                                                                       |                      |                                                            | BLOWS PER FOOT:<br>Number required to drive 1 3/8" ID splitspoon w/140 lb hammer falling 30",                                                                                                        |                       |  |                         |  |  |

Hole No. SH-383

| DRILLING LOG                                                                                                                 |               | DIVISION SOUTH ATLANTIC |                                                                                                  | INSTALLATION SAVANNAH, GA.                                   |                             | SHEET 1 OF 1 SHEETS                                                                                                                                            |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. PROJECT<br>SAVANNAH HARBOR DEEPENING                                                                                      |               |                         |                                                                                                  | 10. SIZE AND TYPE OF BIT<br>1 1/2" SPLITSPOON, 5/8" FISHTAIL |                             |                                                                                                                                                                |  |
| 2. LOCATION (Coordinates or Station)<br>X-946435 Y-719092 GA. EAST                                                           |               |                         |                                                                                                  | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW            |                             |                                                                                                                                                                |  |
| 3. DRILLING AGENCY<br>SAVANNAH DISTRICT                                                                                      |               |                         |                                                                                                  | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Failing 314       |                             |                                                                                                                                                                |  |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH-383                                                            |               |                         |                                                                                                  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                   |                             | DISTURBED<br>6<br>UNDISTURBED<br>0                                                                                                                             |  |
| 5. NAME OF DRILLER<br>DAVID JUSTISS                                                                                          |               |                         |                                                                                                  | 14. TOTAL NUMBER CORE BOXES<br>0                             |                             | 15. ELEVATION GROUND WATER N/A                                                                                                                                 |  |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |               |                         |                                                                                                  | 16. DATE HOLE<br>19 FEB 92                                   |                             | STARTED<br>19 FEB 92<br>COMPLETED<br>19 FEB 92                                                                                                                 |  |
| 7. THICKNESS OF OVERBURDEN<br>61.0'                                                                                          |               |                         |                                                                                                  | 17. ELEVATION TOP OF HOLE<br>0.0'                            |                             | 18. TOTAL CORE RECOVERY FOR BORING<br>N/A                                                                                                                      |  |
| 8. DEPTH DRILLED INTO ROCK<br>0.0'                                                                                           |               |                         |                                                                                                  | 19. SIGNATURE OF INSPECTOR<br>MICHAEL BAILEY                 |                             |                                                                                                                                                                |  |
| 9. TOTAL DEPTH OF HOLE<br>61.0'                                                                                              |               |                         |                                                                                                  |                                                              |                             |                                                                                                                                                                |  |
| ELEVATION<br>0=0'                                                                                                            | DEPTH<br>0=0' | LEGEND<br>c             | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                | % CORE<br>RECOV-<br>ERY<br>e                                 | BOX OR<br>SAMPLE<br>NO<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                      |  |
|                                                                                                                              |               |                         | Water                                                                                            |                                                              |                             | Scale change at 45.0'.<br>Zeogel drilling mud used throughout hole.<br>Tide reading of -1.0' MLW at 13:45<br>obtained by radio from Cockspear Island<br>gauge. |  |
| -46.0'                                                                                                                       | 45            |                         | Bottom of Harbor 46.0'                                                                           |                                                              |                             |                                                                                                                                                                |  |
| -47.5'                                                                                                                       |               |                         | (SM) Dark grey, fine grained, silty SAND.                                                        |                                                              | 1                           | Weight of rods drove splitspoon<br>0.4 before first drive.                                                                                                     |  |
|                                                                                                                              |               |                         | Trace of calcareous shell fragments.                                                             |                                                              |                             |                                                                                                                                                                |  |
| -50.5'                                                                                                                       | 50            |                         | Some calcareous shell fragments up to 3/4" in size.                                              |                                                              | 2                           |                                                                                                                                                                |  |
| -52.0'                                                                                                                       |               |                         | (SP) Light grey, coarse grained, poorly graded shelly SAND. Trace of silt & fine to medium sand. |                                                              | 3                           |                                                                                                                                                                |  |
| -53.5'                                                                                                                       |               |                         |                                                                                                  |                                                              | 4                           |                                                                                                                                                                |  |
|                                                                                                                              | 55            |                         | (SM) Dark grey, fine grained silty SAND. Some calcareous shell fragments.                        |                                                              | 5                           |                                                                                                                                                                |  |
| -58.0'                                                                                                                       |               |                         | Trace of calcareous shell fragments.                                                             |                                                              | 6                           |                                                                                                                                                                |  |
| -61.0'                                                                                                                       | 60            |                         |                                                                                                  |                                                              |                             |                                                                                                                                                                |  |
|                                                                                                                              |               |                         | Bottom of Boring 61.0'                                                                           |                                                              |                             |                                                                                                                                                                |  |
|                                                                                                                              |               |                         | NOTE: Soils visually field classified in accordance with the Unified Soil Classification System. |                                                              |                             | BLOWS PER FOOT:<br>Number required to drive 1 1/2" I.D. splitspoon w/140 lb. hammer falling 30".                                                               |  |

| DRILLING LOG                                            |            |             | DIVISION                                                                                             |                              | INSTALLATION                                     |                                                                                                           | Hole No. 33-421                            |  | SHEET 4 OF 1 SHEETS |  |
|---------------------------------------------------------|------------|-------------|------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------|--|---------------------|--|
| 1. PROJECT                                              |            |             | South Atlantic                                                                                       |                              | Geological                                       |                                                                                                           |                                            |  |                     |  |
| 2. LOCATION (Coordinates or Station)                    |            |             | X-1099.0, Y-62.2 = 25184                                                                             |                              | 10. SIZE AND TYPE OF BIT 3 3/8" = 325 Split = 1" |                                                                                                           | 11. DAYUM FOR ELEVATION SHOWN (TBM or BSL) |  | TBM                 |  |
| 3. DRILLING AGENCY                                      |            |             | Stannard District                                                                                    |                              | 12. MANUFACTURER'S DESIGNATION OF DRILL          |                                                                                                           | Fulton 1500                                |  |                     |  |
| 4. HOLE NO. (As shown on drawing title and file number) |            |             | SH 431                                                                                               |                              | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN       |                                                                                                           | DISTURBED 15                               |  | UNDISTURBED 0       |  |
| 5. NAME OF DRILLER                                      |            |             | Rochester                                                                                            |                              | 14. TOTAL NUMBER CORE BOXES                      |                                                                                                           | 2                                          |  |                     |  |
| 6. DIRECTION OF HOLE                                    |            |             | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                              | 15. ELEVATION GROUND WATER                       |                                                                                                           | NA                                         |  |                     |  |
| 7. THICKNESS OF OVERBURDEN                              |            |             |                                                                                                      |                              | 16. DATE HOLE                                    |                                                                                                           | STARTED 8 MAY 02                           |  | COMPLETED 8 MAY 02  |  |
| 8. DEPTH DRILLED INTO ROCK                              |            |             |                                                                                                      |                              | 17. ELEVATION TOP OF HOLE                        |                                                                                                           | 0'                                         |  |                     |  |
| 9. TOTAL DEPTH OF HOLE                                  |            |             | 111'                                                                                                 |                              | 18. TOTAL CORE RECOVERY FOR BORING               |                                                                                                           | None                                       |  | %                   |  |
|                                                         |            |             |                                                                                                      |                              | 19. SIGNATURE OF INSPECTOR                       |                                                                                                           |                                            |  |                     |  |
| ELEVATION<br>a                                          | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                    | % CORE<br>RECOVER-<br>Y<br>e | BOX OR<br>SAMPLE<br>NO.<br>f                     | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                 |                                            |  |                     |  |
|                                                         |            |             |                                                                                                      |                              |                                                  | Cut 29 ft. at casing<br>to a depth of 29.6'                                                               |                                            |  |                     |  |
|                                                         | 45         |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              |                                                  |                                                                                                           |                                            |  |                     |  |
|                                                         |            |             | Shale of S. 1/2 sec. 2-1/2'                                                                          |                              | 1                                                | Water                                                                                                     |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 2                                                | Weight of logs                                                                                            |                                            |  |                     |  |
|                                                         | 50         |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 3                                                | 0                                                                                                         |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 4                                                | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 5                                                | 18                                                                                                        |                                            |  |                     |  |
|                                                         | 55         |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 6                                                | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 7                                                | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 8                                                | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         | 60         |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 9                                                | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 10                                               | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         | 65         |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 11                                               | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 12                                               | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         | 70         |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 13                                               | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 14                                               | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | 2. 1/2" - 1 3/8" = 1 3/8"                                                                            |                              | 15                                               | 10-100                                                                                                    |                                            |  |                     |  |
|                                                         |            |             | End of Boring at 71.1'                                                                               |                              |                                                  |                                                                                                           |                                            |  |                     |  |
|                                                         |            |             | BLAWS PER FOOT:                                                                                      |                              |                                                  |                                                                                                           |                                            |  |                     |  |
|                                                         |            |             | Number required to drive                                                                             |                              |                                                  |                                                                                                           |                                            |  |                     |  |
|                                                         |            |             | 1 3/8" ID splitspoon w/140 lb.                                                                       |                              |                                                  |                                                                                                           |                                            |  |                     |  |
|                                                         |            |             | hammer falling 30".                                                                                  |                              |                                                  |                                                                                                           |                                            |  |                     |  |
|                                                         |            |             |                                                                                                      |                              |                                                  | NOTE: SOILS VISUALLY FIELD<br>CLASSIFIED IN ACCORDANCE<br>WITH THE UNIFIED SOIL<br>CLASSIFICATION SYSTEM. |                                            |  |                     |  |

| DRILLING LOG                                                                                                                 |  | DIVISION       | INSTALLATION                                             | SHEET 1 OF SHEETS    |                        |
|------------------------------------------------------------------------------------------------------------------------------|--|----------------|----------------------------------------------------------|----------------------|------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |  | South Atlantic | Savannah Ga                                              |                      |                        |
| 2. LOCATION (Coordinates or Station)<br>Ga X = 1092182 Y = 724114                                                            |  |                | 10. SIZE AND TYPE OF BIT 1 3/4" Split Spoon              |                      |                        |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |  |                | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW        |                      |                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 432                                                            |  |                | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Faulding 1500 |                      |                        |
| 5. NAME OF DRILLER<br>Rantree                                                                                                |  |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN               | DISTURBED<br>15      | UNDISTURBED            |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  |                | 14. TOTAL NUMBER CORE BOXES                              | None                 |                        |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |  |                | 15. ELEVATION GROUND WATER                               | N/A                  |                        |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |  |                | 16. DATE HOLE                                            | STARTED<br>10 May 02 | COMPLETED<br>10 May 02 |
| 9. TOTAL DEPTH OF HOLE 70.5'                                                                                                 |  |                | 17. ELEVATION TOP OF HOLE                                | 0'                   |                        |
|                                                                                                                              |  |                | 18. TOTAL CORE RECOVERY FOR BORING                       | None %               |                        |
|                                                                                                                              |  |                | 19. SIGNATURE OF INSPECTOR                               |                      |                        |

| ELEVATION<br>O' a | DEPTH<br>O' b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                 | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g                                                                                                                                                                                                                                            |
|-------------------|---------------|-------------|-------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |               |             | Change of Scale 1" = 5'                                                                                           |                         |                              | Set 69 feet of casing to a depth of -53'                                                                                                                                                                                                                                                                                             |
|                   | 45            |             | Start of Sampling at -45'                                                                                         |                         | 1                            | water                                                                                                                                                                                                                                                                                                                                |
|                   |               |             | 45-46" silty, light brown, very soft, MCL R&D test, black (MV)                                                    |                         | 2                            | weight of rods<br>(0-0-0)<br>9<br>(3-4-5)<br>5<br>(4-5-2)<br>18<br>(5-6-12)<br>19<br>(3-6-13)<br>17<br>(12-11-6)<br>19<br>(5-5-14)<br>61<br>(11-22-25)<br>44<br>(8-20-21)<br>44<br>(11-22-12)<br>40<br>(10-21-19)<br>31<br>(4-9-22)<br>36<br>(12-21-15)<br>23<br>(6-11-12)<br>32<br>(5-16-16)<br>28<br>(8-11-12)<br>66<br>(15-27-39) |
|                   | 50            |             | Sand, poorly sorted, fine to med etc with little fines but few shell fragments up to 15mm MCL R&D test, gray (SP) |                         | 3                            | lost sample                                                                                                                                                                                                                                                                                                                          |
|                   |               |             | likely same as above and below                                                                                    |                         | 4                            | lost sample                                                                                                                                                                                                                                                                                                                          |
|                   | 55            |             | Sand, poorly sorted, fine to med etc with little fines and few shell fragments up to 15mm MCL R&D test, gray (SP) |                         | 5                            | recovery = shells                                                                                                                                                                                                                                                                                                                    |
|                   |               |             | S2.5- S7 = some fines and trace shells up to 2mm                                                                  |                         | 6                            |                                                                                                                                                                                                                                                                                                                                      |
|                   | 60            |             | S7 to 69 = No shells                                                                                              |                         | 7                            |                                                                                                                                                                                                                                                                                                                                      |
|                   | 65            |             |                                                                                                                   |                         | 8                            |                                                                                                                                                                                                                                                                                                                                      |
|                   |               |             |                                                                                                                   |                         | 9                            |                                                                                                                                                                                                                                                                                                                                      |
|                   | 70            |             | Silt, low plasticity, med, little fine to green sandy, moist, green to black (ML) [Moist]                         |                         | 10                           |                                                                                                                                                                                                                                                                                                                                      |
|                   |               |             | End of Boring at 70.5'                                                                                            |                         | 11                           | lost sample                                                                                                                                                                                                                                                                                                                          |
|                   |               |             |                                                                                                                   |                         | 12                           |                                                                                                                                                                                                                                                                                                                                      |
|                   |               |             |                                                                                                                   |                         | 13                           |                                                                                                                                                                                                                                                                                                                                      |
|                   |               |             |                                                                                                                   |                         | 14                           |                                                                                                                                                                                                                                                                                                                                      |
|                   |               |             |                                                                                                                   |                         | 15                           |                                                                                                                                                                                                                                                                                                                                      |

| BLOWS PER FOOT:                                                         |  |
|-------------------------------------------------------------------------|--|
| Number required to drive 1 3/8" ID splitspoon w/140 hammer falling 30". |  |

NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

Hole No. SH-433

| DRILLING LOG                                            |       | DIVISION                                                                                             | INSTALLATION                                                                                                                                      |                                                         | SHEET             |                                                                                                    |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------|
| 1. PROJECT                                              |       | SOUTH ATLANTIC                                                                                       | SAVANNAH DISTRICT                                                                                                                                 |                                                         | 1 OF 1 SHEETS     |                                                                                                    |
| 2. LOCATION (Coordinates or Station)                    |       | X-1100591 Y-719751                                                                                   |                                                                                                                                                   | 10. SIZE AND TYPE OF BIT 1 3/8" ID SPLIT SPOON 54"      |                   |                                                                                                    |
| 3. DRILLING AGENCY                                      |       | SAVANNAH DISTRICT                                                                                    |                                                                                                                                                   | 11. DAYUM FOR ELEVATION SHOWN (TBM or BBL) FISH TAIL    |                   |                                                                                                    |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH-433                                                                                               |                                                                                                                                                   | 12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 1500    |                   |                                                                                                    |
| 5. NAME OF DRILLER                                      |       | HORACE FULCHER                                                                                       |                                                                                                                                                   | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN               |                   |                                                                                                    |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                                                                                                                                   | 14. TOTAL NUMBER CORE BOXES 0                           |                   |                                                                                                    |
| 7. THICKNESS OF OVERBURDEN 61.4' (46.4' WATER)          |       |                                                                                                      |                                                                                                                                                   | 15. ELEVATION GROUND WATER N/A                          |                   |                                                                                                    |
| 8. DEPTH DRILLED INTO ROCK 0.0'                         |       |                                                                                                      |                                                                                                                                                   | 16. DATE HOLE STARTED 14 MAY 2002 COMPLETED 14 MAY 2002 |                   |                                                                                                    |
| 9. TOTAL DEPTH OF HOLE 61.4'                            |       |                                                                                                      |                                                                                                                                                   | 17. ELEVATION TOP OF HOLE 0.0'                          |                   |                                                                                                    |
|                                                         |       |                                                                                                      |                                                                                                                                                   | 18. TOTAL CORE RECOVERY FOR BORING N/A                  |                   |                                                                                                    |
|                                                         |       |                                                                                                      |                                                                                                                                                   | 19. SIGNATURE OF INSPECTOR M. J. Delar P.G.             |                   |                                                                                                    |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                                                         | % CORE RECOVERY                                         | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                     |
| 0.0'                                                    | 0.0'  |                                                                                                      |                                                                                                                                                   |                                                         |                   |                                                                                                    |
|                                                         | 45    |                                                                                                      | WATER                                                                                                                                             |                                                         |                   | NOTES: SCALE CHANGE AT 45.0'. SET 6" CHASING TO BOTTOM OF CHANNEL AND MIXED FLORIGEL DRILLING MUD. |
| -46.4'                                                  |       |                                                                                                      | Bottom of Channel: 46.4'                                                                                                                          |                                                         | JAR               | BLOWS                                                                                              |
| -47.9'                                                  |       |                                                                                                      | (SP) GREY, FINE GRAINED, POORLY GRAINED SAND. SLIGHTLY SILTY, WITH A LITTLE SHELL FRAGMENTS.                                                      |                                                         | 1                 | 27                                                                                                 |
| -50.9'                                                  | 50    |                                                                                                      | (SP-SM) GREY, FINE TO MEDIUM GRAINED POORLY GRAINED SILTY SAND. A LITTLE SHELL FRAGMENT.                                                          |                                                         | 2                 | 14                                                                                                 |
| -55.4'                                                  | 55    |                                                                                                      | (SM) GREY, FINE TO MEDIUM GRAINED SILTY SAND WITH A LITTLE SHELL FRAGMENT.                                                                        |                                                         | 3                 | 20                                                                                                 |
| -58.1'                                                  |       |                                                                                                      | FINE TO COARSE GRAINED, SHELLY.                                                                                                                   |                                                         | 4                 | 23                                                                                                 |
|                                                         | 60    |                                                                                                      | (CH) DARK GRAY, VERT PLASTIC, VERY FAT CLAY WITH OCCASIONAL FINE TO COARSE GRAINED SAND LENS AND FREQUENT VERY FINE GRAINED SAND LAMINAE (VARVE). |                                                         | 5                 | 4                                                                                                  |
| -61.4'                                                  |       |                                                                                                      | (SM-H) GREEN, VERY FINE GRAINED FAT SILTY SAND. SLIGHTLY PLASTIC. TOP OF MIOCENE: 58.1'                                                           |                                                         | 6                 | 19                                                                                                 |
|                                                         |       |                                                                                                      | BOTTOM OF BORING: 61.4'                                                                                                                           |                                                         | 7                 | 3                                                                                                  |
|                                                         |       |                                                                                                      | NOTE: SOILS USUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.                                                   |                                                         | 8                 | 18                                                                                                 |
|                                                         |       |                                                                                                      |                                                                                                                                                   |                                                         |                   | 25                                                                                                 |
|                                                         |       |                                                                                                      |                                                                                                                                                   |                                                         |                   | BLOWS PER FOOT NUMBER REQUIRED TO DRIVE 1 3/8" I.D. SPLITSPOON WITH 140 LB. HAMMER FALLING 30."    |

# SAVANNAH HARBOR BORING LOGS

From Station -60+000

To

Station -85+000

| DRILLING LOG                                             |       | DIVISION                                 |                                                                                                                                                        | INSTALLATION                                           |                       | Hole No. SH-400                                                                 |    |
|----------------------------------------------------------|-------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------|----|
| 1. PROJECT                                               |       | SOUTH ATLANTIC                           |                                                                                                                                                        | SAVANNAH, GA.                                          |                       | SHEET 1 OF 1 SHEETS                                                             |    |
| 2. LOCATION (Coordinates or Station)                     |       | SAVANNAH HARBOUR DEFENDING FORCE/STATION |                                                                                                                                                        | 10. SIZE AND TYPE OF BIT 1 3/8" I.D. SPLITSPRONG, 5/8" |                       | 11. DATUM FOR ELEVATION SHOWN (TBM = MLL) FISHMILL                              |    |
| 3. DRILLING AGENCY                                       |       | SAVANNAH DISTRICT                        |                                                                                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 314    |                       | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 6                                    |    |
| 4. HOLE NO. (As shown on drawing title and title number) |       | SH-400                                   |                                                                                                                                                        | 14. TOTAL NUMBER CORE BOXES 0                          |                       | 15. ELEVATION GROUND WATER N/A                                                  |    |
| 5. NAME OF DRILLER                                       |       | P. J. MONTGOMERY                         |                                                                                                                                                        | 16. DATE HOLE STARTED 30 SEP 97 COMPLETED 30 SEP 97    |                       | 17. ELEVATION TOP OF HOLE 0.0' MLL                                              |    |
| 6. DIRECTION OF HOLE                                     |       | VERTICAL                                 |                                                                                                                                                        | 18. TOTAL CORE RECOVERY FOR BORING N/A                 |                       | 19. SIGNATURE OF INSPECTOR J. P. G.                                             |    |
| 7. THICKNESS OF OVERBURDEN 60.4' (IND. 52.9' WATER)      |       | 8. DEPTH DRILLED INTO ROCK 0.0'          |                                                                                                                                                        | 9. TOTAL DEPTH OF HOLE 60.4'                           |                       |                                                                                 |    |
| ELEVATION MLL                                            | DEPTH | LEGEND                                   | CLASSIFICATION OF MATERIALS (Description)                                                                                                              | % CORE RECOVERY                                        | DOWN-DRILL SAMPLE NO. | REMARKS (Drilling time, water loss, depth of penetration, etc., if significant) |    |
| 50                                                       |       |                                          | WATER                                                                                                                                                  |                                                        |                       | SCALE CHANGE AT 50.0'                                                           |    |
| 52.9'                                                    |       |                                          | BOTTOM OF OCEAN 52.9'                                                                                                                                  |                                                        |                       | SET 6" DIAMETER STEEL CASING TO 52.6'                                           |    |
| 54.4'                                                    |       |                                          | (SP) GRAY FINE POORLY GRADED QUARTZ SAND, TRACE OF FINE TO COARSE SAND SIZE SMALL FRAGMENTS, CALCAREOUS. (SEE REMARKS) 54.4'                           | 11                                                     | 1                     | NO RECOVERY ON FIRST DRIVE. REDRIVE 52.9' TO 54.4' THEN CONT'D DRIVE TO 55.7'   | 3  |
| 55.7'                                                    |       |                                          | (SM) GRAY FINE TO MEDIUM SILTY QUARTZ SAND, 15% FINE TO COARSE SAND SIZE SMALL FRAGMENTS, TRACE OF FINE GRAVEL SIZE SMALL FRAGMENTS, CALCAREOUS. 55.7' | 1                                                      | 2                     | RECOVERED BOTH DRIVES.                                                          | 8  |
| 57.0'                                                    |       |                                          | (SP) GRAY COARSE POORLY GRADED QUARTZ SAND, 40% FINE GRAVEL SIZE SMALL FRAGMENTS, CALCAREOUS. 57.0'                                                    |                                                        | 3                     | BEGAN USING 200GBL DALLING MUO AT 55.3'                                         | 11 |
| 58.2'                                                    |       |                                          | (SM) OLIVE GRAY FINE SILTY QUARTZ SAND, SLIGHTLY CALCAREOUS. 58.2'                                                                                     |                                                        | 4                     |                                                                                 | 12 |
| 60.4'                                                    |       |                                          | DARK OLIVE GRAY, TRACE OF CLAY, BOTTOM OF DRILLING 60.4'                                                                                               |                                                        | 5                     |                                                                                 | 14 |
|                                                          |       |                                          |                                                                                                                                                        |                                                        | 6                     |                                                                                 | 15 |

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER 1/2 FOOT

NUMBER REQUIRED TO DRIVE 1 3/8" I.D. SPLITSPRONG 4/140LB HAMMER FALLING 30".

576 730.2 E 1107482.0 STA -654000 R300



Hole No. SH-401

| DRILLING LOG                                            |       | DIVISION                                                                       |                                                                                                                    | INSTALLATION                               |                 | SHEET                                                                            |  |
|---------------------------------------------------------|-------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------|----------------------------------------------------------------------------------|--|
| 1. PROJECT                                              |       | SOUTH ATLANTIC                                                                 |                                                                                                                    | SAVANNAH GA                                |                 | 1 OF 1 SHEETS                                                                    |  |
| 2. LOCATION (Coordinates or Station)                    |       | SAVANNAH HARBOR DEEPENING FEASIBILITY STUDY                                    |                                                                                                                    | 10. SIZE AND TYPE OF BIT                   |                 | 1 3/8" I.D. SPLIT-POIN, 5/4"                                                     |  |
| 3. DRILLING AGENCY                                      |       | SAVANNAH DISTRICT                                                              |                                                                                                                    | 11. DAYTON FOR ELEVATION SHOWN (TBM = MLL) |                 | 17547916                                                                         |  |
| 4. HOLE NO. (As shown on drawing title) and file number |       | SH-401                                                                         |                                                                                                                    | 12. MANUFACTURER'S DESIGNATION OF DRILL    |                 | FALING 314                                                                       |  |
| 5. NAME OF DRILLER                                      |       | P. DOWNTON                                                                     |                                                                                                                    | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |                 | 7                                                                                |  |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED |                                                                                                                    | 14. TOTAL NUMBER CORE BOXES                |                 | 0                                                                                |  |
| 7. THICKNESS OF OVERBURDEN                              |       | 60.4' (TCL. 49.9' WATER)                                                       |                                                                                                                    | 15. ELEVATION GROUND WATER                 |                 | N/A                                                                              |  |
| 8. DEPTH DRILLED INTO ROCK                              |       | 0.0'                                                                           |                                                                                                                    | 16. DATE HOLE                              |                 | STARTED 30 SEP 97 COMPLETED 30 SEP 97                                            |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 60.4'                                                                          |                                                                                                                    | 17. ELEVATION TOP OF HOLE                  |                 | 20' MLL                                                                          |  |
| 10. SIGNATURE OF INSPECTOR                              |       | J. L. HARRIS, P.G.                                                             |                                                                                                                    | 18. TOTAL CORE RECOVERY FOR BORING         |                 | N/A                                                                              |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                         | CLASSIFICATION OF MATERIALS (Description)                                                                          | % CORE RECOVERY                            | SOIL-SAMPLE NO. | REMARKS (Drilling time, water level, depth of penetration, etc., if significant) |  |
| MLW. 7.0                                                | 0.0   | c                                                                              | WATER                                                                                                              |                                            |                 | SCALING CHANGE AT 45.0'.                                                         |  |
|                                                         | 45    |                                                                                | BOTTOM OF OCEAN 49.9'                                                                                              |                                            |                 | 50T 6" DIAMETER STEEL CASING TO 53.2'.                                           |  |
|                                                         | 50    |                                                                                | (SP) GRAY MEDIUM TO COARSE POORLY SORTED QUARTZ SAND, TRACE OF FINE QUARTZ GRAVEL 20% SHELL FRAGMENTS, CALCAREOUS. |                                            |                 | CASING BEGAN 27 10 17                                                            |  |
| -49.9'                                                  | 50    |                                                                                | 51.4                                                                                                               |                                            | 1               | DROPPING WITH 15 20 54                                                           |  |
| -51.4'                                                  | 50    |                                                                                | NO GRAVEL. 54.4'                                                                                                   |                                            | 2               | CLEANOUT BEGINNING 14 34 21 55                                                   |  |
| -52.9'                                                  | 50    |                                                                                | 54.4'                                                                                                              |                                            | 3               | AT 57.4' 14 16 36 57                                                             |  |
| -54.4'                                                  | 50    |                                                                                | 55.9'                                                                                                              |                                            | 4               | 5 10 15 25                                                                       |  |
| -55.9'                                                  | 50    |                                                                                | COARSE GRAINED, SOME FINE QUARTZ GRAVEL AND SHELL FRAGMENTS. 55.9'                                                 |                                            | 5               | 5 34 27 63                                                                       |  |
| -57.4'                                                  | 50    |                                                                                | (SCURRY DARK OLIVE GRAY FINE CLAYEY SAND, SOME SILT, SLIGHTLY CALCAREOUS.                                          |                                            | 6               | 13 12 9 17                                                                       |  |
| -60.4'                                                  | 60    |                                                                                | BOTTOM OF BORING 60.4'                                                                                             |                                            | 7               |                                                                                  |  |
|                                                         | 65    |                                                                                |                                                                                                                    |                                            |                 |                                                                                  |  |

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

Blows PER 1/2 FOOT  
NUMBER REQUIRED TO DRIVE 17 1/2" I.D. SPLIT-POIN W/140 LB HAMMER FALLING 30".

N: 714170.3 E: 1111794.8 STA - 694965, L-05

N: 711,612,0 E 1,116,089.2 STA -74+980.4

Hole No. SH-403

| DRILLING LOG                                                                                         |       | DIVISION                                                        | INSTALLATION                                                                                                        |                 | SHEET             |                                                                                |
|------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| 1. PROJECT <u>SAVANNAH HARBOR DEEPENING FEASIBILITY STUDY</u>                                        |       | <u>SOUTH ATLANTIC</u>                                           | <u>SAVANNAH, GA.</u>                                                                                                |                 | 1 OF 1 SHEETS     |                                                                                |
| 2. LOCATION (Coordinates or Station)                                                                 |       | 10. SIZE AND TYPE OF BIT <u>3/8" F.D. SPLITSPOON 5/8"</u>       |                                                                                                                     |                 |                   |                                                                                |
| LAT: <u>31° 56' 31.6649"</u> LONG: <u>80° 40' 8.9228"</u>                                            |       | 11. DATUM FOR ELEVATION SHOWN (TBM or MLL) <u>FISH TAIL MLL</u> |                                                                                                                     |                 |                   |                                                                                |
| 3. DRILLING AGENCY                                                                                   |       | 12. MANUFACTURER'S DESIGNATION OF DRILL                         |                                                                                                                     |                 |                   |                                                                                |
| <u>SAVANNAH DISTRICT</u>                                                                             |       | <u>FAIRING 314</u>                                              |                                                                                                                     |                 |                   |                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number)                                              |       | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN                       |                                                                                                                     |                 |                   |                                                                                |
| <u>SH-403</u>                                                                                        |       | DISTURBED <u>7</u> UNDISTURBED <u>0</u>                         |                                                                                                                     |                 |                   |                                                                                |
| 5. NAME OF DRILLER                                                                                   |       | 14. TOTAL NUMBER CORE BOXES                                     |                                                                                                                     |                 |                   |                                                                                |
| <u>C. ROBBINS</u>                                                                                    |       | <u>0</u>                                                        |                                                                                                                     |                 |                   |                                                                                |
| 6. DIRECTION OF HOLE                                                                                 |       | 15. ELEVATION GROUND WATER                                      |                                                                                                                     |                 |                   |                                                                                |
| <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |       | <u>N/A</u>                                                      |                                                                                                                     |                 |                   |                                                                                |
| 7. THICKNESS OF OVERBURDEN                                                                           |       | 16. DATE HOLE                                                   |                                                                                                                     |                 |                   |                                                                                |
| <u>60.1' DEL 49.6' WATER</u>                                                                         |       | STARTED <u>14 Oct 97</u> COMPLETED <u>14 Oct 97</u>             |                                                                                                                     |                 |                   |                                                                                |
| 8. DEPTH DRILLED INTO ROCK                                                                           |       | 17. ELEVATION TOP OF HOLE                                       |                                                                                                                     |                 |                   |                                                                                |
| <u>0.0</u>                                                                                           |       | <u>0.0' MLL</u>                                                 |                                                                                                                     |                 |                   |                                                                                |
| 9. TOTAL DEPTH OF HOLE                                                                               |       | 18. TOTAL CORE RECOVERY FOR BORING                              |                                                                                                                     |                 |                   |                                                                                |
| <u>60.1'</u>                                                                                         |       | <u>N/A</u>                                                      |                                                                                                                     |                 |                   |                                                                                |
|                                                                                                      |       | 19. SIGNATURE OF INSPECTOR                                      |                                                                                                                     |                 |                   |                                                                                |
|                                                                                                      |       | <u>J. [Signature] P.E.</u>                                      |                                                                                                                     |                 |                   |                                                                                |
| ELEVATION                                                                                            | DEPTH | LEGEND                                                          | CLASSIFICATION OF MATERIALS (Description)                                                                           | % CORE RECOVERY | BORING SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|                                                                                                      |       |                                                                 | <u>WATER</u>                                                                                                        |                 |                   | <u>SCALE CHANGE AT 45.0'</u>                                                   |
|                                                                                                      | 45    |                                                                 | <u>BOTTOM OF OCEAN 49.6'</u>                                                                                        |                 |                   | <u>SET 6" DIAMETER STEEL CASING TO 53.6'</u>                                   |
|                                                                                                      | 50    |                                                                 | <u>(SP) BROWN MEDIUM TO COARSE POORLY GRADED SAND, TRACE OF SMALL FRAGMENTS AND FINE QUARTZ GRAVEL, CALCAREOUS.</u> |                 |                   |                                                                                |
|                                                                                                      | 51.1' |                                                                 | <u>51.1'</u>                                                                                                        |                 |                   |                                                                                |
|                                                                                                      | 54.1' |                                                                 | <u>GRAY FINE TO MEDIUM GRAINED, TRACE OF SILT, NO GRAVEL.</u>                                                       |                 |                   |                                                                                |
|                                                                                                      | 55.6' |                                                                 | <u>54.1'</u>                                                                                                        |                 |                   |                                                                                |
|                                                                                                      | 58.6' |                                                                 | <u>TRACE OF FINE QUARTZ GRAVEL, NO SILT, SLIGHTLY CALCAREOUS.</u>                                                   |                 |                   |                                                                                |
|                                                                                                      | 60.1' |                                                                 | <u>55.6'</u>                                                                                                        |                 |                   |                                                                                |
|                                                                                                      |       |                                                                 | <u>COARSE GRAINED. 58.6'</u>                                                                                        |                 |                   |                                                                                |
|                                                                                                      |       |                                                                 | <u>(CL) DARK OLIVE GRAY SILTY LEAN CLAY, SOME FINE QUARTZ SAND, SLIGHTLY CALCAREOUS.</u>                            |                 |                   |                                                                                |
|                                                                                                      |       |                                                                 | <u>60.1'</u>                                                                                                        |                 |                   |                                                                                |
|                                                                                                      |       |                                                                 | <u>BOTTOM OF BORING 60.1'</u>                                                                                       |                 |                   |                                                                                |
|                                                                                                      | 65    |                                                                 |                                                                                                                     |                 |                   |                                                                                |

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

6  
BLOWS PER FOOT  
Number required to drive  
1 3/8" ID Splitspoon w/140lb  
hammer falling 30".

N: 709, 576.9 E 1,120,691.0  
SEA -80 +005, 6

Hole No. SH-434

| DRILLING LOG                                            |              | DIVISION                                                                                             | INSTALLATION                                                                                                   |                 | SHEET 1 OF 1 SHEETS        |                                                                                                                |
|---------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------|
| 1. PROJECT                                              |              | <u>SOUTH ATLANTIC</u>                                                                                | <u>SAVANNAH DISTRICT</u>                                                                                       |                 |                            |                                                                                                                |
| 2. LOCATION (Coordinates or Station)                    |              | <u>X-1104039 Y-717984</u>                                                                            | 10. SIZE AND TYPE OF BIT <u>1-1/2" ID SPLITSPAWN 5-1/2"</u>                                                    |                 |                            |                                                                                                                |
| 3. DRILLING AGENCY                                      |              | <u>SAVANNAH DISTRICT</u>                                                                             | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <u>MSL</u>                                                          |                 |                            |                                                                                                                |
| 4. HOLE NO. (As shown on drawing title and file number) |              | <u>SH-434</u>                                                                                        | 12. MANUFACTURER'S DESIGNATION OF DRILL <u>FALLING 1500</u>                                                    |                 |                            |                                                                                                                |
| 5. NAME OF DRILLER                                      |              | <u>Wesley Herman</u>                                                                                 | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN                                                                     |                 | <u>8</u>                   | <u>0</u>                                                                                                       |
| 6. DIRECTION OF HOLE                                    |              | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. | 14. TOTAL NUMBER CORE BOXES                                                                                    |                 | <u>0</u>                   |                                                                                                                |
| 7. THICKNESS OF OVERBURDEN                              |              | <u>62.7' (48.4' WATER)</u>                                                                           | 15. ELEVATION GROUND WATER                                                                                     |                 | <u>N/A</u>                 |                                                                                                                |
| 8. DEPTH DRILLED INTO ROCK                              |              | <u>0.0'</u>                                                                                          | 16. DATE HOLE                                                                                                  |                 | <u>STARTED 15 MAY 2002</u> | <u>COMPLETED 15 MAY 2002</u>                                                                                   |
| 9. TOTAL DEPTH OF HOLE                                  |              | <u>62.7'</u>                                                                                         | 17. ELEVATION TOP OF HOLE                                                                                      |                 | <u>0.0'</u>                |                                                                                                                |
|                                                         |              |                                                                                                      | 18. TOTAL CORE RECOVERY FOR BORING                                                                             |                 | <u>N/A</u>                 |                                                                                                                |
|                                                         |              |                                                                                                      | 19. SIGNATURE OF INSPECTOR                                                                                     |                 | <u>Wesley Herman P.G.</u>  |                                                                                                                |
| ELEVATION                                               | DEPTH        | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description)                                                                      | % CORE RECOVERY | BOX OR SAMPLE NO.          | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)                                 |
| <u>0.0'</u>                                             | <u>0.0'</u>  | <u>c</u>                                                                                             | <u>d</u>                                                                                                       | <u>e</u>        | <u>f</u>                   | <u>g</u>                                                                                                       |
|                                                         |              |                                                                                                      | <u>WATER</u>                                                                                                   |                 |                            | <u>NOTES: SCALE CHANGE AT 45.0'. SET 2" STEEL CASING TO BOTTOM OF CHANNEL AND MIXED FLOTTING DRILLING MUD.</u> |
|                                                         | <u>45'</u>   |                                                                                                      | <u>BOTTOM OF CHANNEL: 45'</u>                                                                                  |                 | <u>JAR</u>                 | <u>Blows</u>                                                                                                   |
|                                                         | <u>50'</u>   |                                                                                                      | <u>(5-10) DARK GRAY VERY FINE GRAINED SILTY SAND. TRACE OF SHELLS. LAMINAE OF FAT CLAY. 25 SS CLAY LAMINAE</u> |                 | <u>1</u>                   | <u>0</u>                                                                                                       |
|                                                         |              |                                                                                                      | <u>VERY FINE GRAINED SHELL FRAGMENTS</u>                                                                       |                 | <u>2</u>                   | <u>13</u>                                                                                                      |
|                                                         | <u>55'</u>   |                                                                                                      | <u>GRAY, FINE TO COARSE GRAINED, SHELLY.</u>                                                                   |                 | <u>3</u>                   | <u>38</u>                                                                                                      |
|                                                         |              |                                                                                                      | <u>A FEW GRAVEL SIZED CLAM SHELL FRAGMENTS.</u>                                                                |                 | <u>4</u>                   | <u>44</u>                                                                                                      |
|                                                         |              |                                                                                                      | <u>LESS SILTY</u>                                                                                              |                 | <u>5</u>                   | <u>42</u>                                                                                                      |
|                                                         | <u>60'</u>   |                                                                                                      | <u>LOOSE SHELL MASH</u>                                                                                        |                 | <u>6</u>                   | <u>11</u>                                                                                                      |
|                                                         |              |                                                                                                      |                                                                                                                |                 | <u>7</u>                   | <u>13</u>                                                                                                      |
|                                                         | <u>61.0'</u> |                                                                                                      | <u>(SC-SM) GREEN, FINE GRAINED SILTY CLAYEY SAND</u>                                                           |                 | <u>8</u>                   | <u>17</u>                                                                                                      |
|                                                         | <u>62.7'</u> |                                                                                                      | <u>TOP OF MUDCLE: 61.0'</u>                                                                                    |                 |                            | <u>16</u>                                                                                                      |
|                                                         |              |                                                                                                      | <u>BOTTOM OF BORING: 62.7'</u>                                                                                 |                 |                            | <u>21</u>                                                                                                      |
|                                                         |              |                                                                                                      | <u>NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.</u>        |                 |                            | <u>BLOWS PER FOOT: NUMBER REQUIRED TO DRIVE 1 1/2" ID SPLITSPAWN WITH 140 POUND HAMMER FALLING 30 INCHES.</u>  |

Hole No. SH 435

| DRILLING LOG                                                                                                                 |            | DIVISION       |                                                                                                                              | INSTALLATION                                            |                              | SHEET 1                                                                                   |                        |
|------------------------------------------------------------------------------------------------------------------------------|------------|----------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|------------------------|
| 1. PROJECT<br>Savannah Harbor                                                                                                |            | South Atlantic |                                                                                                                              | Savannah Ga.                                            |                              | OF 1 SHEETS                                                                               |                        |
| 2. LOCATION (Coordinate or Station)<br>Ga. X=1105843 Y=717416                                                                |            |                |                                                                                                                              | 10. SIZE AND TYPE OF BIT 1 3/8" ID Split Spoon          |                              |                                                                                           |                        |
| 3. DRILLING AGENCY<br>Savannah District                                                                                      |            |                |                                                                                                                              | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)<br>MLW       |                              |                                                                                           |                        |
| 4. HOLE NO. (As shown on drawing title and file number)<br>SH 435                                                            |            |                |                                                                                                                              | 12. MANUFACTURER'S DESIGNATION OF DRILL<br>Falling ISCO |                              |                                                                                           |                        |
| 5. NAME OF DRILLER<br>Herman                                                                                                 |            |                |                                                                                                                              | 13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN          |                              | DISTURBED<br>9                                                                            | UNDISTURBED<br>0       |
| 6. DIRECTION OF HOLE<br><input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |            |                |                                                                                                                              | 14. TOTAL NUMBER CORE BOXES<br>None                     |                              |                                                                                           |                        |
| 7. THICKNESS OF OVERBURDEN                                                                                                   |            |                |                                                                                                                              | 15. ELEVATION GROUND WATER<br>NA                        |                              |                                                                                           |                        |
| 8. DEPTH DRILLED INTO ROCK                                                                                                   |            |                |                                                                                                                              | 16. DATE HOLE<br>16 MAY 02                              |                              | STARTED<br>16 MAY 02                                                                      | COMPLETED<br>16 MAY 02 |
| 9. TOTAL DEPTH OF HOLE 61.5'                                                                                                 |            |                |                                                                                                                              | 17. ELEVATION TOP OF HOLE<br>0'                         |                              |                                                                                           |                        |
|                                                                                                                              |            |                |                                                                                                                              | 18. TOTAL CORE RECOVERY FOR BORING<br>None              |                              | 3                                                                                         |                        |
|                                                                                                                              |            |                |                                                                                                                              | 19. SIGNATURE OF INSPECTOR                              |                              |                                                                                           |                        |
| ELEVATION<br>a                                                                                                               | DEPTH<br>b | LEGEND<br>c    | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                            | % CORE<br>RECOVER-<br>ERY<br>e                          | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |                        |
|                                                                                                                              |            |                | change of scale 1'=5'                                                                                                        |                                                         |                              | Set 75 feet of casing<br>to a depth of 59.5'                                              |                        |
|                                                                                                                              | 50         |                | Start of Sampling - 51'                                                                                                      |                                                         |                              | water                                                                                     |                        |
|                                                                                                                              |            |                | (SP) Sand, poorly graded fine to med. gr.<br>little fines, trace shell fragments up to<br>1/8", MC 100% white, green to grey |                                                         | 1                            | (0-1-0)<br>4                                                                              |                        |
|                                                                                                                              |            |                | (SM) Sand, well-sorted fine to med. gr.<br>trace fine, trace shell fragments<br>up to 1/8", MC 100% white, green to grey     |                                                         | 2                            | (0-0-4)<br>24                                                                             |                        |
|                                                                                                                              | 55         |                | (SP) Sand, poorly sorted fine to med. gr.<br>little fines, trace shell fragments<br>up to 1/8", MC 100% white, green to grey |                                                         | 3                            | (7-10-14)<br>42                                                                           |                        |
|                                                                                                                              |            |                | (SP) Sand, poorly sorted fine to med. gr.<br>little fines, trace shell fragments<br>up to 1/8", MC 100% white, green to grey |                                                         | 4                            | (26-20-2)<br>27                                                                           |                        |
|                                                                                                                              |            |                | (SP) Sand, poorly sorted fine to med. gr.<br>little fines, trace shell fragments<br>up to 1/8", MC 100% white, green to grey |                                                         | 5                            | (14-14-13)<br>17                                                                          |                        |
|                                                                                                                              |            |                | (SP) Sand, poorly sorted fine to med. gr.<br>little fines, trace shell fragments<br>up to 1/8", MC 100% white, green to grey |                                                         | 6                            | (5-9-8)<br>29                                                                             |                        |
|                                                                                                                              | 60         |                | (M) Silty, low plasticity fine to med. gr.<br>fine to med. gr., MC 100% white, green to grey<br>(Miocene)                    |                                                         | 7                            | (5-12-17)                                                                                 |                        |
|                                                                                                                              |            |                | End of Boring 61.5'                                                                                                          |                                                         | 8                            |                                                                                           |                        |
|                                                                                                                              |            |                |                                                                                                                              |                                                         | 9                            |                                                                                           |                        |
| <p><u>BLOWS PER FOOT:</u><br/>Number required to drive<br/>1 3/8" ID split spoon w/140 lb<br/>hammer falling 30"</p>         |            |                |                                                                                                                              |                                                         |                              |                                                                                           |                        |

NOTE: SOILS VISUALLY FIELD  
CLASSIFIED IN ACCORDANCE  
WITH THE UNIFIED SOIL  
CLASSIFICATION SYSTEM.

Hole No. SH 436

| DRILLING LOG                                            |  | DIVISION       | INSTALLATION                                   |  | SHEET 1                               |  |
|---------------------------------------------------------|--|----------------|------------------------------------------------|--|---------------------------------------|--|
| 1. PROJECT                                              |  | South Atlantic | Savannah Ga                                    |  | OF 1 SHEETS                           |  |
| 2. LOCATION (Coordinates or Station)                    |  |                | 10. SIZE AND TYPE OF BIT 1 3/8" ID Split Spoon |  |                                       |  |
| 3. DRILLING AGENCY                                      |  |                | 11. DAYUM FOR ELEVATION SHOWN (TBM or MSL)     |  |                                       |  |
| 4. HOLE NO. (As shown on drawing title and file number) |  | SH-436         | 12. MANUFACTURER'S DESIGNATION OF DRILL        |  |                                       |  |
| 5. NAME OF DRILLER                                      |  |                | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN     |  | DISTURBED 9 UNDISTURBED 0             |  |
| 6. DIRECTION OF HOLE                                    |  |                | 14. TOTAL NUMBER CORE BOXES                    |  | None                                  |  |
| 7. THICKNESS OF OVERBURDEN                              |  | 12"            | 15. ELEVATION GROUND WATER                     |  | NA                                    |  |
| 8. DEPTH DRILLED INTO ROCK                              |  | 0"             | 16. DATE HOLE                                  |  | STARTED 20 Jun 02 COMPLETED 20 Jun 02 |  |
| 9. TOTAL DEPTH OF HOLE                                  |  | 61.2"          | 17. ELEVATION TOP OF HOLE                      |  | 0'                                    |  |
|                                                         |  |                | 18. TOTAL CORE RECOVERY FOR BORING             |  | None %                                |  |
|                                                         |  |                | 19. SIGNATURE OF INSPECTOR                     |  |                                       |  |

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description)                  | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
|-----------|-------|--------|------------------------------------------------------------|-----------------|-------------------|--------------------------------------------------------------------------------|
| a         | b     | c      | d                                                          | e               | f                 | g                                                                              |
|           | 45    |        | Change of scale 4" = 5"                                    |                 |                   | Set 70 feet of casing to a depth of -54.2'                                     |
|           | 50    |        | Start of sandstone 49.2'                                   |                 | 1                 | 25                                                                             |
|           |       |        | 50.0-50.2 fine shell fragments, mostly 2 mm (2H)           |                 | 2                 | (49.0-50.0)                                                                    |
|           |       |        | 50.2-50.4 fine sand to fine shell fragments                |                 | 3                 | 37                                                                             |
|           |       |        | 50.4-50.6 med to coarse ss. trace shells mostly to pebbles |                 | 4                 | (6.9-30)                                                                       |
|           |       |        | 50.6-50.8 fine to med ss. to sandstone                     |                 | 5                 | 49                                                                             |
|           | 55    |        | 50.8-51.0 trace shells                                     |                 | 6                 | (7.0-20.0)                                                                     |
|           |       |        | 51.0-51.2 trace shells                                     |                 | 7                 | 38                                                                             |
|           |       |        | 51.2-51.4 trace shells                                     |                 | 8                 | (29.0-41)                                                                      |
|           |       |        | 51.4-51.6 trace shells                                     |                 | 9                 | 21                                                                             |
|           |       |        | 51.6-51.8 trace shells                                     |                 | 10                | (6.10-11)                                                                      |
|           |       |        | 51.8-52.0 trace shells                                     |                 | 11                | 26                                                                             |
|           |       |        | 52.0-52.2 trace shells                                     |                 | 12                | (6.9-17)                                                                       |
|           |       |        | 52.2-52.4 trace shells                                     |                 | 13                | 80                                                                             |
|           |       |        | 52.4-52.6 trace shells                                     |                 | 14                | (16.32-48)                                                                     |
|           |       |        | 52.6-52.8 trace shells                                     |                 | 15                | 49                                                                             |
|           |       |        | 52.8-53.0 trace shells                                     |                 | 16                | (17.18-31)                                                                     |
|           |       |        | 53.0-53.2 trace shells                                     |                 | 17                |                                                                                |
|           |       |        | 53.2-53.4 trace shells                                     |                 | 18                |                                                                                |
|           |       |        | 53.4-53.6 trace shells                                     |                 | 19                |                                                                                |
|           |       |        | 53.6-53.8 trace shells                                     |                 | 20                |                                                                                |
|           |       |        | 53.8-54.0 trace shells                                     |                 | 21                |                                                                                |
|           |       |        | 54.0-54.2 trace shells                                     |                 | 22                |                                                                                |
|           |       |        | 54.2-54.4 trace shells                                     |                 | 23                |                                                                                |
|           |       |        | 54.4-54.6 trace shells                                     |                 | 24                |                                                                                |
|           |       |        | 54.6-54.8 trace shells                                     |                 | 25                |                                                                                |
|           |       |        | 54.8-55.0 trace shells                                     |                 | 26                |                                                                                |
|           |       |        | 55.0-55.2 trace shells                                     |                 | 27                |                                                                                |
|           |       |        | 55.2-55.4 trace shells                                     |                 | 28                |                                                                                |
|           |       |        | 55.4-55.6 trace shells                                     |                 | 29                |                                                                                |
|           |       |        | 55.6-55.8 trace shells                                     |                 | 30                |                                                                                |
|           |       |        | 55.8-56.0 trace shells                                     |                 | 31                |                                                                                |
|           |       |        | 56.0-56.2 trace shells                                     |                 | 32                |                                                                                |
|           |       |        | 56.2-56.4 trace shells                                     |                 | 33                |                                                                                |
|           |       |        | 56.4-56.6 trace shells                                     |                 | 34                |                                                                                |
|           |       |        | 56.6-56.8 trace shells                                     |                 | 35                |                                                                                |
|           |       |        | 56.8-57.0 trace shells                                     |                 | 36                |                                                                                |
|           |       |        | 57.0-57.2 trace shells                                     |                 | 37                |                                                                                |
|           |       |        | 57.2-57.4 trace shells                                     |                 | 38                |                                                                                |
|           |       |        | 57.4-57.6 trace shells                                     |                 | 39                |                                                                                |
|           |       |        | 57.6-57.8 trace shells                                     |                 | 40                |                                                                                |
|           |       |        | 57.8-58.0 trace shells                                     |                 | 41                |                                                                                |
|           |       |        | 58.0-58.2 trace shells                                     |                 | 42                |                                                                                |
|           |       |        | 58.2-58.4 trace shells                                     |                 | 43                |                                                                                |
|           |       |        | 58.4-58.6 trace shells                                     |                 | 44                |                                                                                |
|           |       |        | 58.6-58.8 trace shells                                     |                 | 45                |                                                                                |
|           |       |        | 58.8-59.0 trace shells                                     |                 | 46                |                                                                                |
|           |       |        | 59.0-59.2 trace shells                                     |                 | 47                |                                                                                |
|           |       |        | 59.2-59.4 trace shells                                     |                 | 48                |                                                                                |
|           |       |        | 59.4-59.6 trace shells                                     |                 | 49                |                                                                                |
|           |       |        | 59.6-59.8 trace shells                                     |                 | 50                |                                                                                |
|           |       |        | 59.8-60.0 trace shells                                     |                 | 51                |                                                                                |
|           |       |        | 60.0-60.2 trace shells                                     |                 | 52                |                                                                                |
|           |       |        | 60.2-60.4 trace shells                                     |                 | 53                |                                                                                |
|           |       |        | 60.4-60.6 trace shells                                     |                 | 54                |                                                                                |
|           |       |        | 60.6-60.8 trace shells                                     |                 | 55                |                                                                                |
|           |       |        | 60.8-61.0 trace shells                                     |                 | 56                |                                                                                |
|           |       |        | 61.0-61.2 trace shells                                     |                 | 57                |                                                                                |
|           |       |        | 61.2-61.4 trace shells                                     |                 | 58                |                                                                                |
|           |       |        | 61.4-61.6 trace shells                                     |                 | 59                |                                                                                |
|           |       |        | 61.6-61.8 trace shells                                     |                 | 60                |                                                                                |
|           |       |        | 61.8-62.0 trace shells                                     |                 | 61                |                                                                                |
|           |       |        | 62.0-62.2 trace shells                                     |                 | 62                |                                                                                |
|           |       |        | 62.2-62.4 trace shells                                     |                 | 63                |                                                                                |
|           |       |        | 62.4-62.6 trace shells                                     |                 | 64                |                                                                                |
|           |       |        | 62.6-62.8 trace shells                                     |                 | 65                |                                                                                |
|           |       |        | 62.8-63.0 trace shells                                     |                 | 66                |                                                                                |
|           |       |        | 63.0-63.2 trace shells                                     |                 | 67                |                                                                                |
|           |       |        | 63.2-63.4 trace shells                                     |                 | 68                |                                                                                |
|           |       |        | 63.4-63.6 trace shells                                     |                 | 69                |                                                                                |
|           |       |        | 63.6-63.8 trace shells                                     |                 | 70                |                                                                                |
|           |       |        | 63.8-64.0 trace shells                                     |                 | 71                |                                                                                |
|           |       |        | 64.0-64.2 trace shells                                     |                 | 72                |                                                                                |
|           |       |        | 64.2-64.4 trace shells                                     |                 | 73                |                                                                                |
|           |       |        | 64.4-64.6 trace shells                                     |                 | 74                |                                                                                |
|           |       |        | 64.6-64.8 trace shells                                     |                 | 75                |                                                                                |
|           |       |        | 64.8-65.0 trace shells                                     |                 | 76                |                                                                                |
|           |       |        | 65.0-65.2 trace shells                                     |                 | 77                |                                                                                |
|           |       |        | 65.2-65.4 trace shells                                     |                 | 78                |                                                                                |
|           |       |        | 65.4-65.6 trace shells                                     |                 | 79                |                                                                                |
|           |       |        | 65.6-65.8 trace shells                                     |                 | 80                |                                                                                |
|           |       |        | 65.8-66.0 trace shells                                     |                 | 81                |                                                                                |
|           |       |        | 66.0-66.2 trace shells                                     |                 | 82                |                                                                                |
|           |       |        | 66.2-66.4 trace shells                                     |                 | 83                |                                                                                |
|           |       |        | 66.4-66.6 trace shells                                     |                 | 84                |                                                                                |
|           |       |        | 66.6-66.8 trace shells                                     |                 | 85                |                                                                                |
|           |       |        | 66.8-67.0 trace shells                                     |                 | 86                |                                                                                |
|           |       |        | 67.0-67.2 trace shells                                     |                 | 87                |                                                                                |
|           |       |        | 67.2-67.4 trace shells                                     |                 | 88                |                                                                                |
|           |       |        | 67.4-67.6 trace shells                                     |                 | 89                |                                                                                |
|           |       |        | 67.6-67.8 trace shells                                     |                 | 90                |                                                                                |
|           |       |        | 67.8-68.0 trace shells                                     |                 | 91                |                                                                                |
|           |       |        | 68.0-68.2 trace shells                                     |                 | 92                |                                                                                |
|           |       |        | 68.2-68.4 trace shells                                     |                 | 93                |                                                                                |
|           |       |        | 68.4-68.6 trace shells                                     |                 | 94                |                                                                                |
|           |       |        | 68.6-68.8 trace shells                                     |                 | 95                |                                                                                |
|           |       |        | 68.8-69.0 trace shells                                     |                 | 96                |                                                                                |
|           |       |        | 69.0-69.2 trace shells                                     |                 | 97                |                                                                                |
|           |       |        | 69.2-69.4 trace shells                                     |                 | 98                |                                                                                |
|           |       |        | 69.4-69.6 trace shells                                     |                 | 99                |                                                                                |
|           |       |        | 69.6-69.8 trace shells                                     |                 | 100               |                                                                                |
|           |       |        | 69.8-70.0 trace shells                                     |                 | 101               |                                                                                |
|           |       |        | 70.0-70.2 trace shells                                     |                 | 102               |                                                                                |
|           |       |        | 70.2-70.4 trace shells                                     |                 | 103               |                                                                                |
|           |       |        | 70.4-70.6 trace shells                                     |                 | 104               |                                                                                |
|           |       |        | 70.6-70.8 trace shells                                     |                 | 105               |                                                                                |
|           |       |        | 70.8-71.0 trace shells                                     |                 | 106               |                                                                                |
|           |       |        | 71.0-71.2 trace shells                                     |                 | 107               |                                                                                |
|           |       |        | 71.2-71.4 trace shells                                     |                 | 108               |                                                                                |
|           |       |        | 71.4-71.6 trace shells                                     |                 | 109               |                                                                                |
|           |       |        | 71.6-71.8 trace shells                                     |                 | 110               |                                                                                |
|           |       |        | 71.8-72.0 trace shells                                     |                 | 111               |                                                                                |
|           |       |        | 72.0-72.2 trace shells                                     |                 | 112               |                                                                                |
|           |       |        | 72.2-72.4 trace shells                                     |                 | 113               |                                                                                |
|           |       |        | 72.4-72.6 trace shells                                     |                 | 114               |                                                                                |
|           |       |        | 72.6-72.8 trace shells                                     |                 | 115               |                                                                                |
|           |       |        | 72.8-73.0 trace shells                                     |                 | 116               |                                                                                |
|           |       |        | 73.0-73.2 trace shells                                     |                 | 117               |                                                                                |
|           |       |        | 73.2-73.4 trace shells                                     |                 | 118               |                                                                                |
|           |       |        | 73.4-73.6 trace shells                                     |                 | 119               |                                                                                |
|           |       |        | 73.6-73.8 trace shells                                     |                 | 120               |                                                                                |
|           |       |        | 73.8-74.0 trace shells                                     |                 | 121               |                                                                                |
|           |       |        | 74.0-74.2 trace shells                                     |                 | 122               |                                                                                |
|           |       |        | 74.2-74.4 trace shells                                     |                 | 123               |                                                                                |
|           |       |        | 74.4-74.6 trace shells                                     |                 | 124               |                                                                                |
|           |       |        | 74.6-74.8 trace shells                                     |                 | 125               |                                                                                |
|           |       |        | 74.8-75.0 trace shells                                     |                 | 126               |                                                                                |
|           |       |        | 75.0-75.2 trace shells                                     |                 | 127               |                                                                                |
|           |       |        | 75.2-75.4 trace shells                                     |                 | 128               |                                                                                |
|           |       |        | 75.4-75.6 trace shells                                     |                 | 129               |                                                                                |
|           |       |        | 75.6-75.8 trace shells                                     |                 | 130               |                                                                                |
|           |       |        | 75.8-76.0 trace shells                                     |                 | 131               |                                                                                |
|           |       |        | 76.0-76.2 trace shells                                     |                 | 132               |                                                                                |
|           |       |        | 76.2-76.4 trace shells                                     |                 | 133               |                                                                                |
|           |       |        | 76.4-76.6 trace shells                                     |                 | 134               |                                                                                |
|           |       |        | 76.6-76.8 trace shells                                     |                 | 135               |                                                                                |
|           |       |        | 76.8-77.0 trace shells                                     |                 | 136               |                                                                                |
|           |       |        | 77.0-77.2 trace shells                                     |                 | 137               |                                                                                |
|           |       |        | 77.2-77.4 trace shells                                     |                 | 138               |                                                                                |
|           |       |        | 77.4-77.6 trace shells                                     |                 | 139               |                                                                                |
|           |       |        | 77.6-77.8 trace shells                                     |                 | 140               |                                                                                |
|           |       |        | 77.8-78.0 trace shells                                     |                 | 141               |                                                                                |
|           |       |        | 78.0-78.2 trace shells                                     |                 | 142               |                                                                                |
|           |       |        | 78.2-78.4 trace shells                                     |                 | 143               |                                                                                |
|           |       |        | 78.4-78.6 trace shells                                     |                 | 144               |                                                                                |
|           |       |        | 78.6-78.8 trace shells                                     |                 | 145               |                                                                                |
|           |       |        | 78.8-79.0 trace shells                                     |                 | 146               |                                                                                |
|           |       |        | 79.0-79.2 trace shells                                     |                 | 147               |                                                                                |
|           |       |        | 79.2-79.4 trace shells                                     |                 | 148               |                                                                                |
|           |       |        | 79.4-79.6 trace shells                                     |                 | 149               |                                                                                |
|           |       |        | 79.6-79.8 trace shells                                     |                 | 150               |                                                                                |
|           |       |        | 79.8-80.0 trace shells                                     |                 | 151               |                                                                                |
|           |       |        | 80.0-80.2 trace shells                                     |                 | 152               |                                                                                |
|           |       |        | 80.2-80.4 trace shells                                     |                 | 153               |                                                                                |
|           |       |        | 80.4-80.6 trace shells                                     |                 | 154               |                                                                                |
|           |       |        | 80.6-80.8 trace shells                                     |                 | 155               |                                                                                |
|           |       |        | 80.8-81.0 trace shells                                     |                 | 156               |                                                                                |
|           |       |        | 81.0-81.2 trace shells                                     |                 | 157               |                                                                                |
|           |       |        | 81.2-81.4 trace shells                                     |                 | 158               |                                                                                |
|           |       |        | 81.4-81.6 trace shells                                     |                 | 159               |                                                                                |
|           |       |        | 81.6-81.8 trace shells                                     |                 | 160               |                                                                                |
|           |       |        | 81.8-82.0 trace shells                                     |                 | 161               |                                                                                |
|           |       |        | 82.0-82.2 trace shells                                     |                 | 162               |                                                                                |
|           |       |        | 82.2-82.4 trace shells                                     |                 | 163               |                                                                                |
|           |       |        | 82.4-82.6 trace shells                                     |                 | 164               |                                                                                |
|           |       |        | 82.6-82.8 trace shells                                     |                 | 165               |                                                                                |
|           |       |        | 82.8-83.0 trace shells                                     |                 | 166               |                                                                                |
|           |       |        | 83.0-83.2 trace shells                                     |                 | 167               |                                                                                |
|           |       |        | 83.2-83.4 trace shells                                     |                 | 168               |                                                                                |
|           |       |        | 83.4-83.6 trace shells                                     |                 | 169               |                                                                                |
|           |       |        | 83.6-83.8 trace shells                                     |                 | 170               |                                                                                |
|           |       |        | 83.8-84.0 trace shells                                     |                 | 171               |                                                                                |
|           |       |        | 84.0-84.2 trace shells                                     |                 | 172               |                                                                                |
|           |       |        | 84.2-84.4 trace shells                                     |                 | 173               |                                                                                |
|           |       |        | 84.4-84.6 trace shells                                     |                 | 174               |                                                                                |
|           |       |        | 84.6-84.8 trace shells                                     |                 | 175               |                                                                                |
|           |       |        | 84.8-85.0 trace shells                                     |                 | 176               |                                                                                |
|           |       |        | 85.0-85.2 trace shells                                     |                 | 177               |                                                                                |
|           |       |        | 85.2-85.4 trace shells                                     |                 | 178               |                                                                                |
|           |       |        | 85.4-85.6 trace shells                                     |                 | 179               |                                                                                |
|           |       |        | 85.6-85.8 trace shells                                     |                 | 180               |                                                                                |
|           |       |        | 85.8-86.0 trace shells                                     |                 | 181               |                                                                                |
|           |       |        | 86.0-86.2 trace shells                                     |                 | 182               |                                                                                |
|           |       |        | 86.2-86.4 trace shells                                     |                 | 183               |                                                                                |
|           |       |        | 86.4-86.6 trace shells                                     |                 | 184               |                                                                                |
|           |       |        | 86.6-86.8 trace shells                                     |                 | 185               |                                                                                |
|           |       |        | 86.8-87.0 trace shells                                     |                 | 186               |                                                                                |
|           |       |        | 87.0-87.2 trace shells                                     |                 | 187               |                                                                                |
|           |       |        | 87.2-87.4 trace shells                                     |                 | 188               |                                                                                |
|           |       |        | 87.4-87.6 trace shells                                     |                 | 189               |                                                                                |
|           |       |        | 87.6-87.8 trace shells                                     |                 | 190               |                                                                                |
|           |       |        | 87.8-88.0 trace shells                                     |                 | 191               |                                                                                |
|           |       |        | 88.0-88.2 trace shells                                     |                 | 192               |                                                                                |
|           |       |        | 88.2-88.4 trace shells                                     |                 | 193               |                                                                                |
|           |       |        | 88.4-88.6 trace shells                                     |                 | 194               |                                                                                |
|           |       |        | 88.6-88.8 trace shells                                     |                 | 19                |                                                                                |

Hole No. 5H437

| DRILLING LOG                                            |  | DIVISION                                                                                  |  | INSTALLATION                               |  | SHEET                                   |  |
|---------------------------------------------------------|--|-------------------------------------------------------------------------------------------|--|--------------------------------------------|--|-----------------------------------------|--|
| 1. PROJECT                                              |  | SOUTH ATLANTIC                                                                            |  | Savannah GA                                |  | OF 1 SHEETS                             |  |
| 2. LOCATION (Coordinates or Station)                    |  | X=1110560 Y=714976 GA                                                                     |  | 10. SIZE AND TYPE OF BIT                   |  | 1 3/8" ID Splitspoon                    |  |
| 3. DRILLING AGENCY                                      |  | Savannah District                                                                         |  | 11. DATUM FOR ELEVATION SHOWN (TBM or BBL) |  | MLW                                     |  |
| 4. HOLE NO. (As shown on drawing title and file number) |  | 5H437                                                                                     |  | 12. MANUFACTURER'S DESIGNATION OF DRILL    |  | Falling 1500                            |  |
| 5. NAME OF DRILLER                                      |  | Herman                                                                                    |  | 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN |  | DISTURBED 5 UNDISTURBED 0               |  |
| 6. DIRECTION OF HOLE                                    |  | <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |  | 14. TOTAL NUMBER CORE BOXES                |  | N/A                                     |  |
| 7. THICKNESS OF OVERBURDEN                              |  | 99'                                                                                       |  | 15. ELEVATION GROUND WATER                 |  | N/A                                     |  |
| 8. DEPTH DRILLED INTO ROCK                              |  | 99'                                                                                       |  | 16. DATE HOLE                              |  | STARTED 24 June 02 COMPLETED 24 June 02 |  |
| 9. TOTAL DEPTH OF HOLE                                  |  | 100.6 #4                                                                                  |  | 17. ELEVATION TOP OF HOLE                  |  | 0                                       |  |
|                                                         |  |                                                                                           |  | 18. TOTAL CORE RECOVERY FOR BORING         |  | 100%                                    |  |
|                                                         |  |                                                                                           |  | 19. SIGNATURE OF INSPECTOR                 |  |                                         |  |

| ELEVATION<br>a | DEPTH<br>b | LEGEND<br>c | CLASSIFICATION OF MATERIALS<br>(Description)<br>d                                                                                                                                                                         | % CORE<br>RECOVERY<br>e | BOX OR<br>SAMPLE<br>NO.<br>f | REMARKS<br>(Drilling time, water loss, depth of<br>weathering, etc., if significant)<br>g |
|----------------|------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------|-------------------------------------------------------------------------------------------|
|                | 50         |             | change scale 1"=5'                                                                                                                                                                                                        |                         |                              | Set 72" of casing<br>to a depth of 56.4'                                                  |
|                |            |             | Start of Sampling = 51.6'                                                                                                                                                                                                 |                         |                              | water                                                                                     |
|                | 55         |             | (SP) Sand, mostly gray &<br>fine to medium grained<br>silts, green to brown<br>clay = 57.6' fine to med grain<br>fine to med grain silts<br>fine to med grain silts<br>fine to med grain silts<br>fine to med grain silts |                         | 1                            | 25<br>(49-11-14)                                                                          |
|                |            |             |                                                                                                                                                                                                                           |                         | 2                            | 43<br>(8-16-21)                                                                           |
|                |            |             |                                                                                                                                                                                                                           |                         | 3                            | 56<br>(42-24-57)                                                                          |
|                |            |             |                                                                                                                                                                                                                           |                         | 4                            | 12<br>(7-5-8)                                                                             |
|                | 60         |             | (SP) Sand, silty, fine grained, gray<br>silty, brown to green, green<br>yellow to red, green, which<br>is silty, brown to green (micaceous)<br>silty, brown to green, gray                                                |                         | 5                            | 59<br>(13-24-35)<br>46<br>(27-46-50)                                                      |
|                |            |             | End of Boring at 69.6'                                                                                                                                                                                                    |                         |                              |                                                                                           |

NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

BLOWS PER FOOT:  
Number required to drive 1 3/8" ID splitspoon w/140 hammer falling 30".





| DRILLING LOG                                            |       | DIVISION                                                                                             |                                           | INSTALLATION                                   |                   | Note No. 4443                                                                   |  |
|---------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------|-------------------|---------------------------------------------------------------------------------|--|
| PROJECT                                                 |       | SOUTH ATLANTIC                                                                                       |                                           | SAVANNAH, GA                                   |                   | SHEET 1 OF 1 SHEETS                                                             |  |
| 1. PROJECT                                              |       | SAVANNAH HARBOR PROJECT                                                                              |                                           | 10. SIZE AND TYPE OF BIT 1 3/8" ID SPLIT SPOON |                   |                                                                                 |  |
| 2. LOCATION (Coordinates or Station)                    |       | X = 111 8559 Y = 710873 GA                                                                           |                                           | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL)     |                   | MLW                                                                             |  |
| 3. DRILLING AGENCY                                      |       | SAVANNAH DISTRICT                                                                                    |                                           | 12. MANUFACTURER'S DESIGNATION OF DRILL        |                   | FALLING 1500                                                                    |  |
| 4. HOLE NO. (As shown on drawing title and file number) |       | SH443                                                                                                |                                           | 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN      |                   | 8                                                                               |  |
| 5. NAME OF DRILLER                                      |       | WIDINAMP                                                                                             |                                           | 14. TOTAL NUMBER CORE BOXES                    |                   | 9                                                                               |  |
| 6. DIRECTION OF HOLE                                    |       | <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT. |                                           | 15. ELEVATION GROUND WATER                     |                   | N/A                                                                             |  |
| 7. THICKNESS OF OVERBURDEN                              |       | 7.5'                                                                                                 |                                           | 16. DATE HOLE                                  |                   | STARTED 26 JUL 02 COMPLETED 26 JUL 02                                           |  |
| 8. DEPTH DRILLED INTO ROCK                              |       | G                                                                                                    |                                           | 17. ELEVATION TOP OF HOLE                      |                   | -47.3'                                                                          |  |
| 9. TOTAL DEPTH OF HOLE                                  |       | 60.8'                                                                                                |                                           | 18. TOTAL CORE RECOVERY FOR BORING             |                   | -                                                                               |  |
|                                                         |       |                                                                                                      |                                           | 19. SIGNATURE OF INSPECTOR                     |                   | [Signature]                                                                     |  |
| ELEVATION                                               | DEPTH | LEGEND                                                                                               | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY                                | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)  |  |
| 45                                                      |       |                                                                                                      |                                           |                                                |                   | NOTE CHANGE OF SCALE AT 45'                                                     |  |
| 40                                                      |       |                                                                                                      |                                           |                                                |                   | SET 74 FEET OF CASING TO A DEPTH OF 36.4'                                       |  |
| 35                                                      |       |                                                                                                      |                                           |                                                |                   | BOTTOM HARBOR -47.3' ELEV                                                       |  |
| 30                                                      |       |                                                                                                      |                                           |                                                |                   | NO RECOVERY W.P.                                                                |  |
| 25                                                      |       |                                                                                                      |                                           |                                                |                   | 9                                                                               |  |
| 20                                                      |       |                                                                                                      |                                           |                                                |                   | W.P.                                                                            |  |
| 15                                                      |       |                                                                                                      |                                           |                                                |                   | W.P.                                                                            |  |
| 10                                                      |       |                                                                                                      |                                           |                                                |                   | W.P.                                                                            |  |
| 5                                                       |       |                                                                                                      |                                           |                                                |                   | 11                                                                              |  |
| 0                                                       |       |                                                                                                      |                                           |                                                |                   | 9                                                                               |  |
|                                                         |       |                                                                                                      |                                           |                                                |                   | 14                                                                              |  |
|                                                         |       |                                                                                                      |                                           |                                                |                   | 15                                                                              |  |
|                                                         |       |                                                                                                      |                                           |                                                |                   | END OF BORING                                                                   |  |
|                                                         |       |                                                                                                      |                                           |                                                |                   | BLOWS PER FOOT:                                                                 |  |
|                                                         |       |                                                                                                      |                                           |                                                |                   | Number required to Drive 1 3/8" ID splitspoon w/ 12 lb hammer falling 30" ..    |  |
|                                                         |       |                                                                                                      |                                           |                                                |                   | NOTE: Soils field classification in accordance with the Soils Classification by |  |

**APPENDIX B**

**SAVANNAH HARBOR**

**LABORATORY DATA**

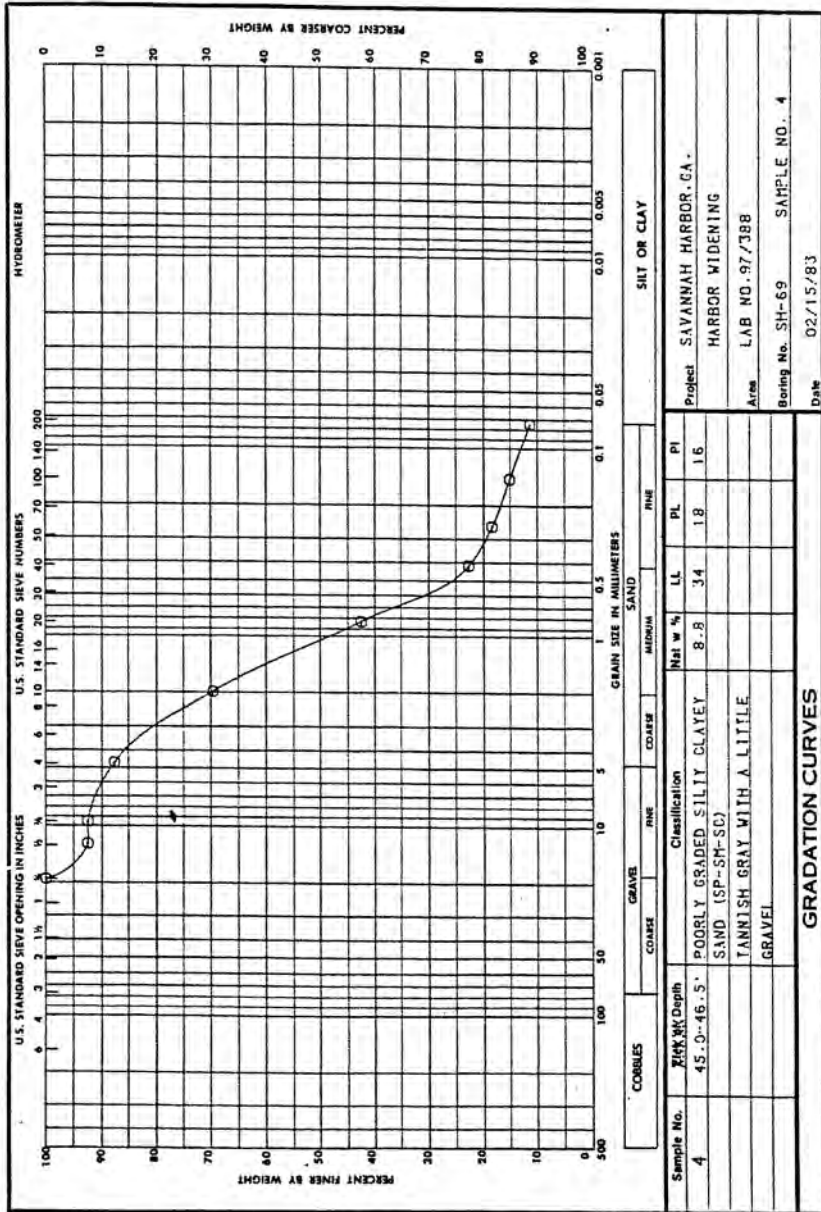
EN-GS

| TRANSMITTAL OF SAD LABORATORY REPORT(S)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------|
| TO: Savannah District<br>ATTN: CESAS-ENGs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | FROM: Director (CESAD-EN-FL)<br>South Atlantic Division Laboratory<br>Corps of Engineers, US Army<br>P. O. Box 51<br>Marietta, Georgia 30061 |
| PROJECT: Savannah Harbor Widening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Requisition No.<br>SAS-EN-GS-87-23                                                                                                           |
| SUBJECT: Test Reports                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Work Order No.<br>5193                                                                                                                       |
| <p>1. The test results shown on the enclosed General Test Report (SAD Form 158), are for those samples from the various holes where tests were requested for moisture content only. All other test results on samples that were tested for sieve analysis, Atterberg Limits, specific gravity, and visual classification are reported on ENG Form 2087 (gradation curves).</p> <p>2. This completes all testing requested on Requisition No. SAS-EN-GS-87-23, which we are closing out. If you have questions, please contact Elton Shinn at 404/421-5299.</p> <p>Encls</p> |  |                                                                                                                                              |
| Submitted By:<br>ROBERT J. STEPHENSON, P.E.<br>Director, SAD Laboratory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | Signature<br><br>Date<br>9 June 1987                      |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

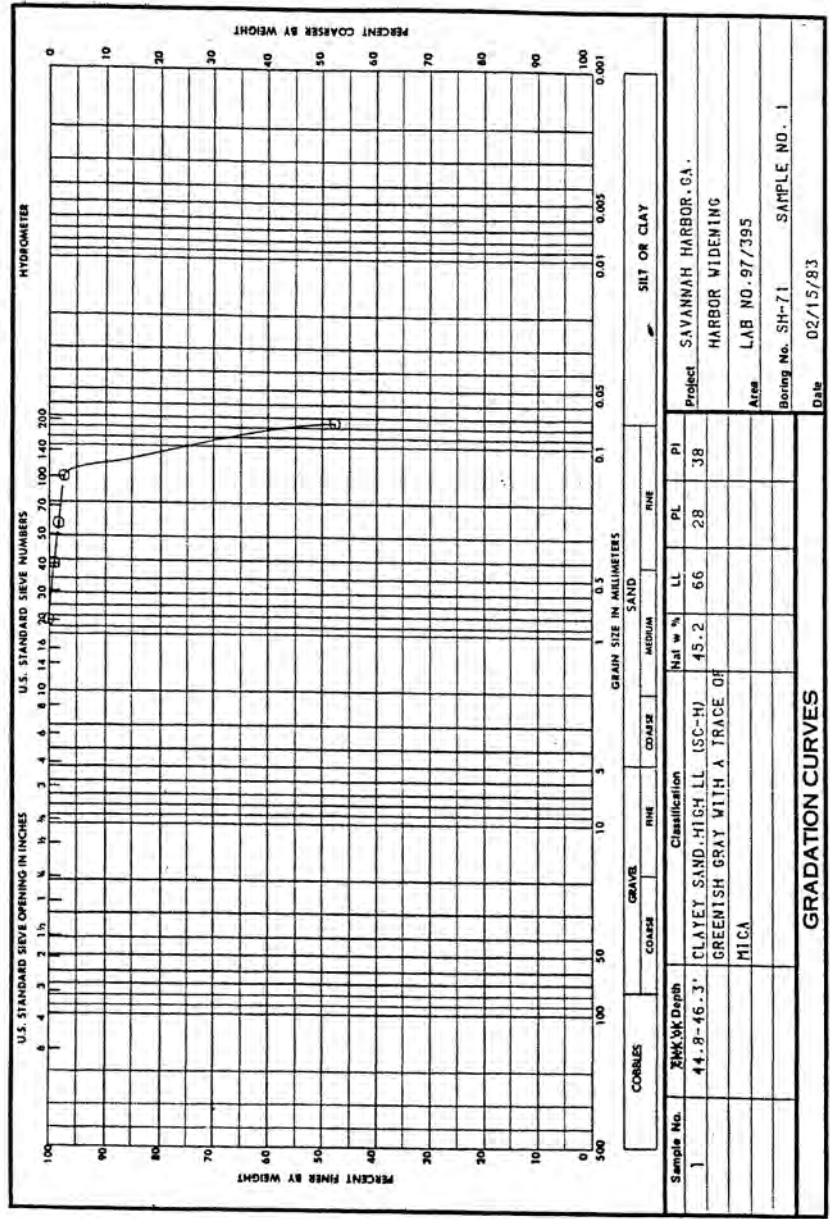
W.O. No. 3504

Req. No. EN-GS-83-54



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

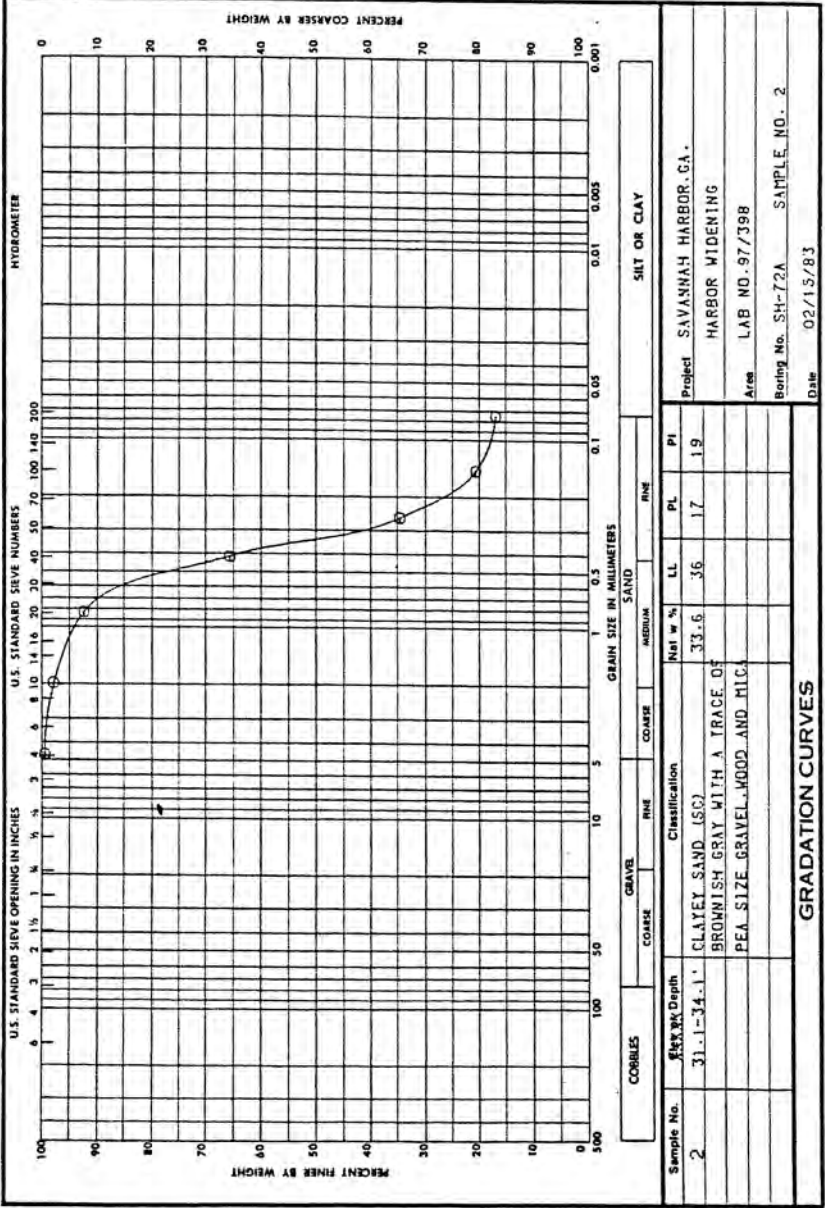
W.O. No. 3504  
Req. No. EN-65-83-54



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.C. INV. 3504  
Req. No. E.N-GS-83-54

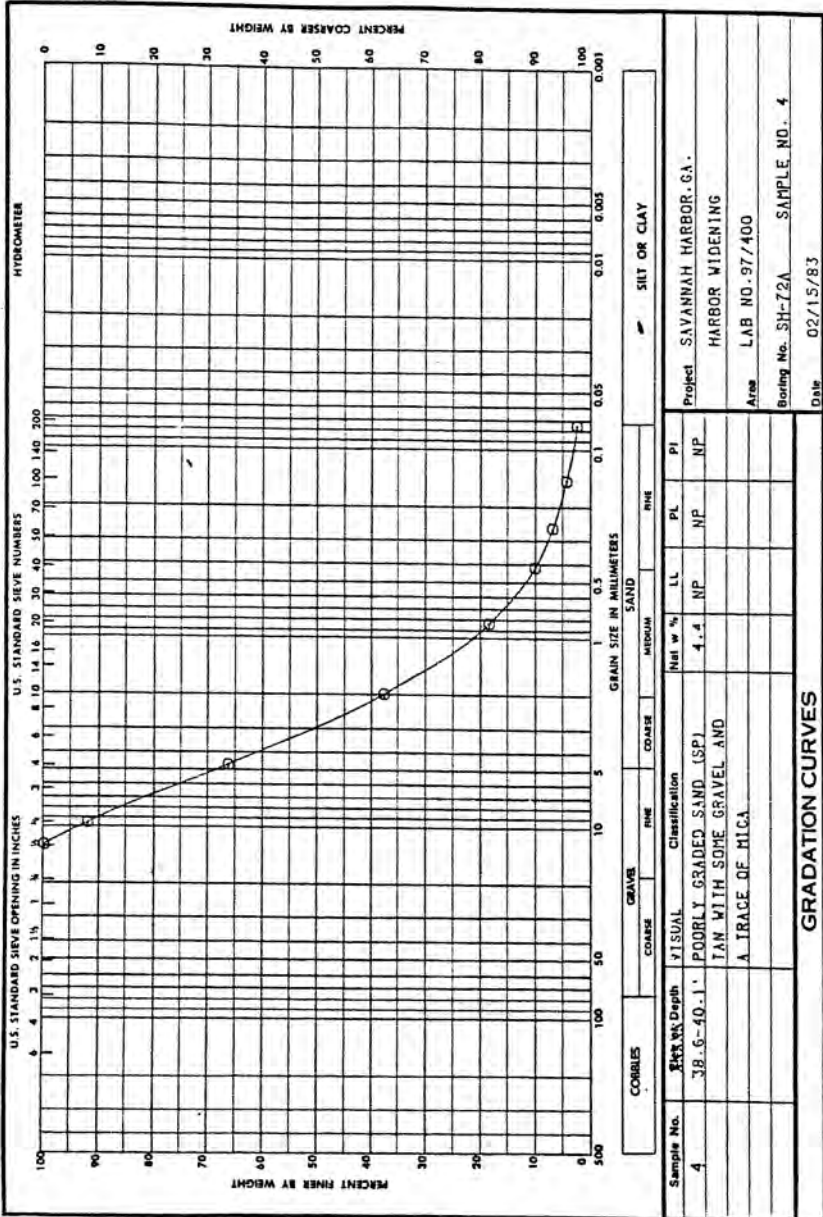


FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504

Req. No. EN-GS-83-54

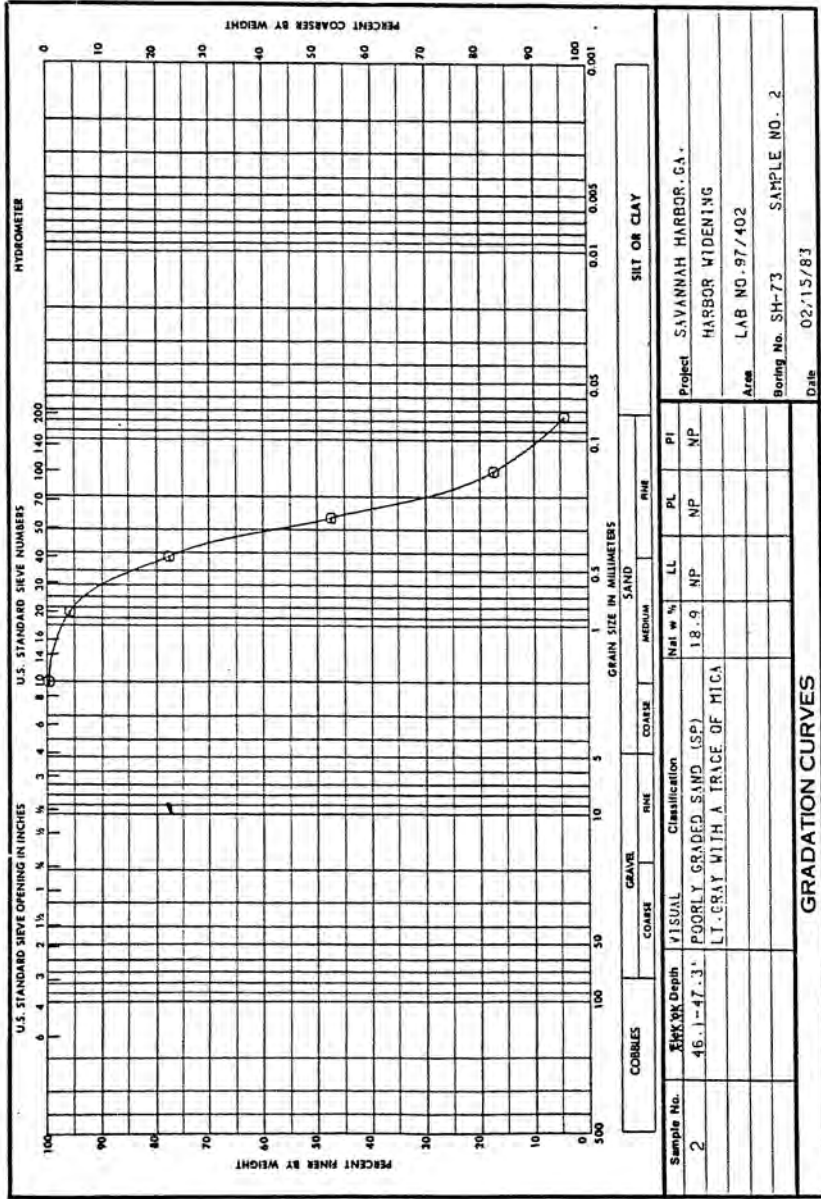


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504

Req. No. EN-6S-83-54

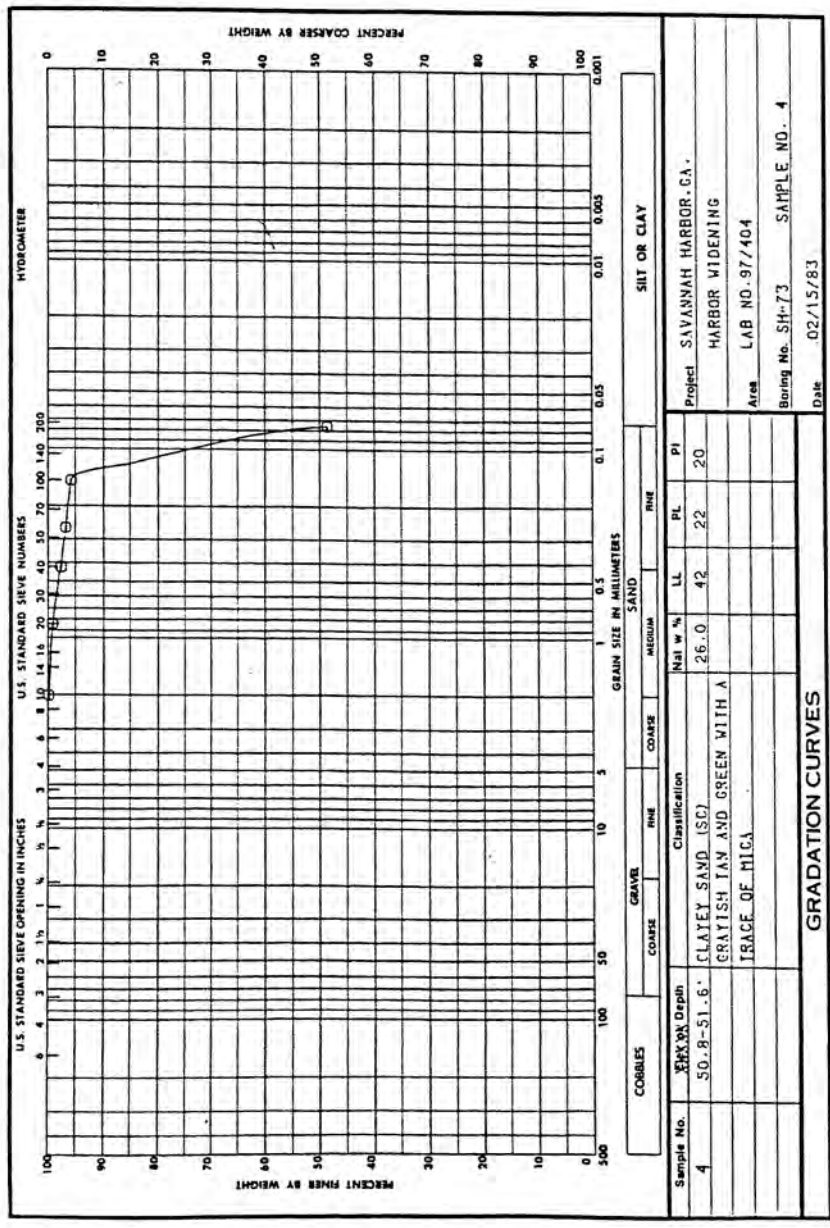


ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504  
Req. No. EN-GS-83-54

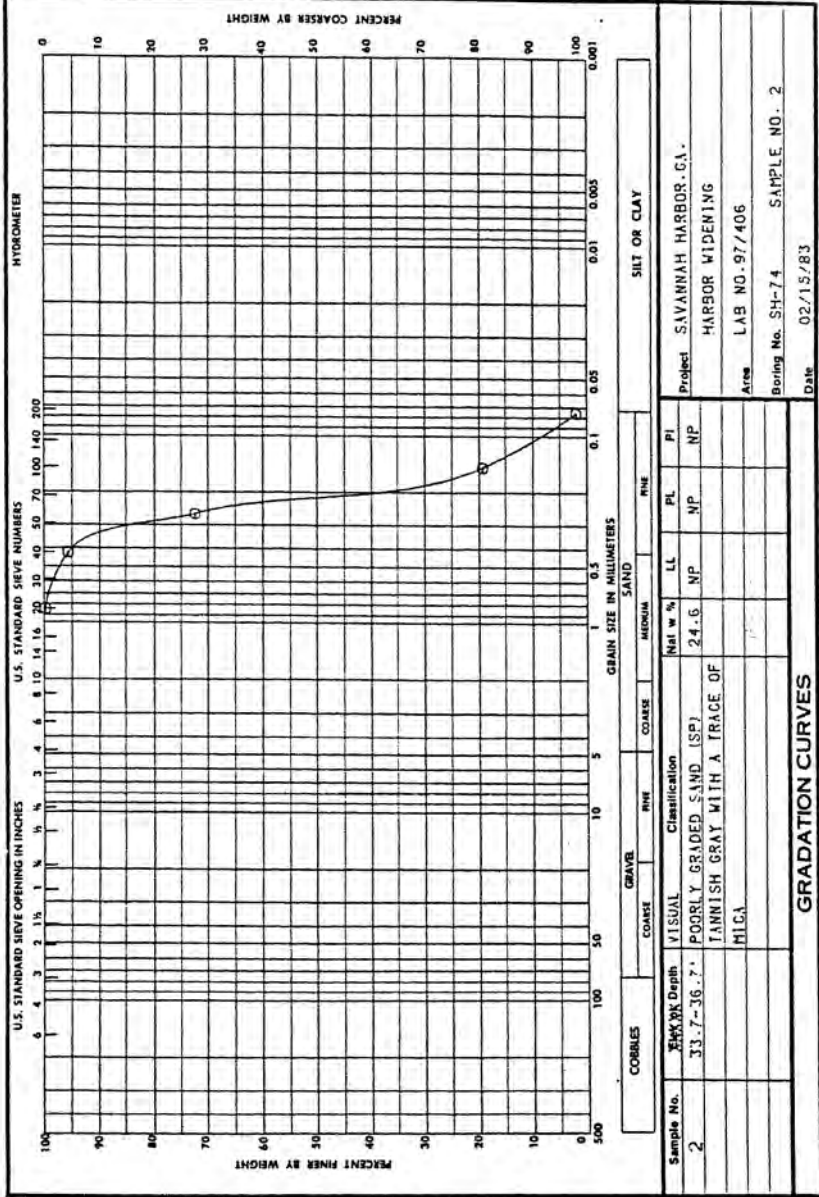


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1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

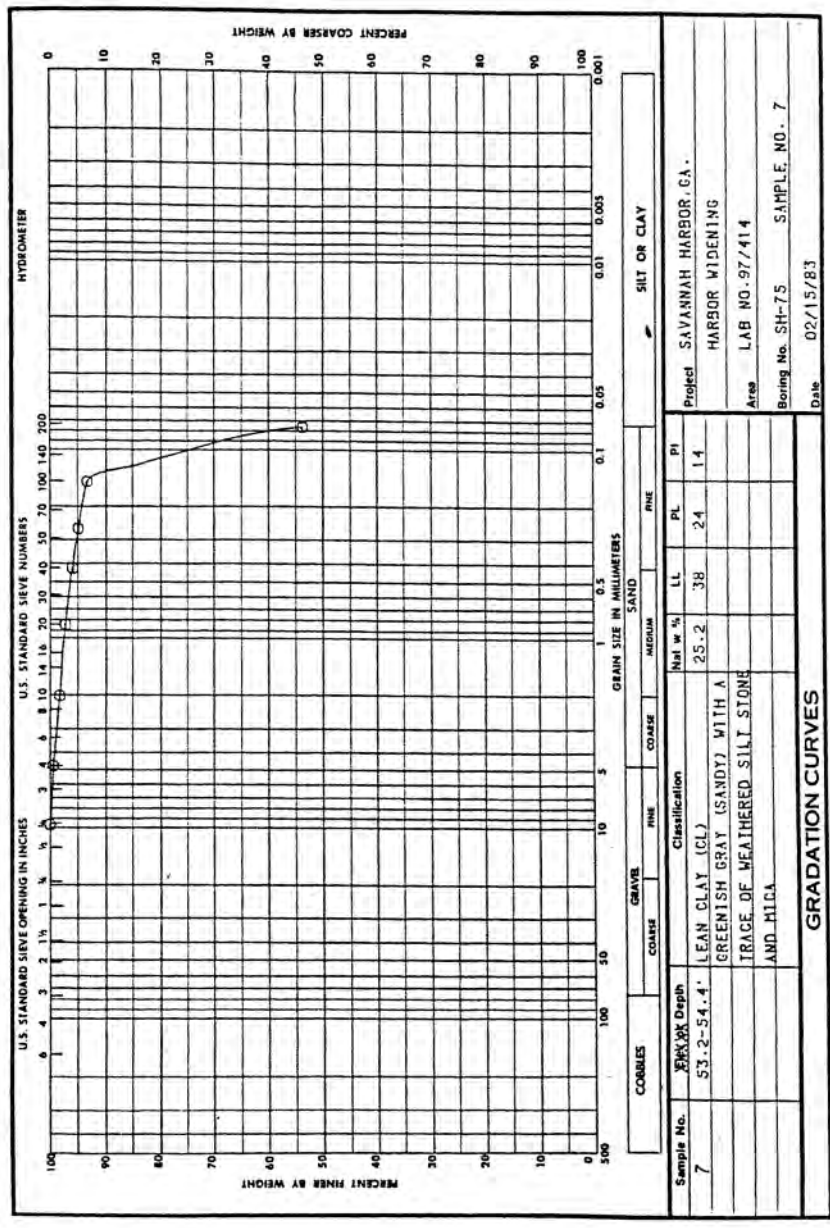
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Req. No. EN-GS-83-54



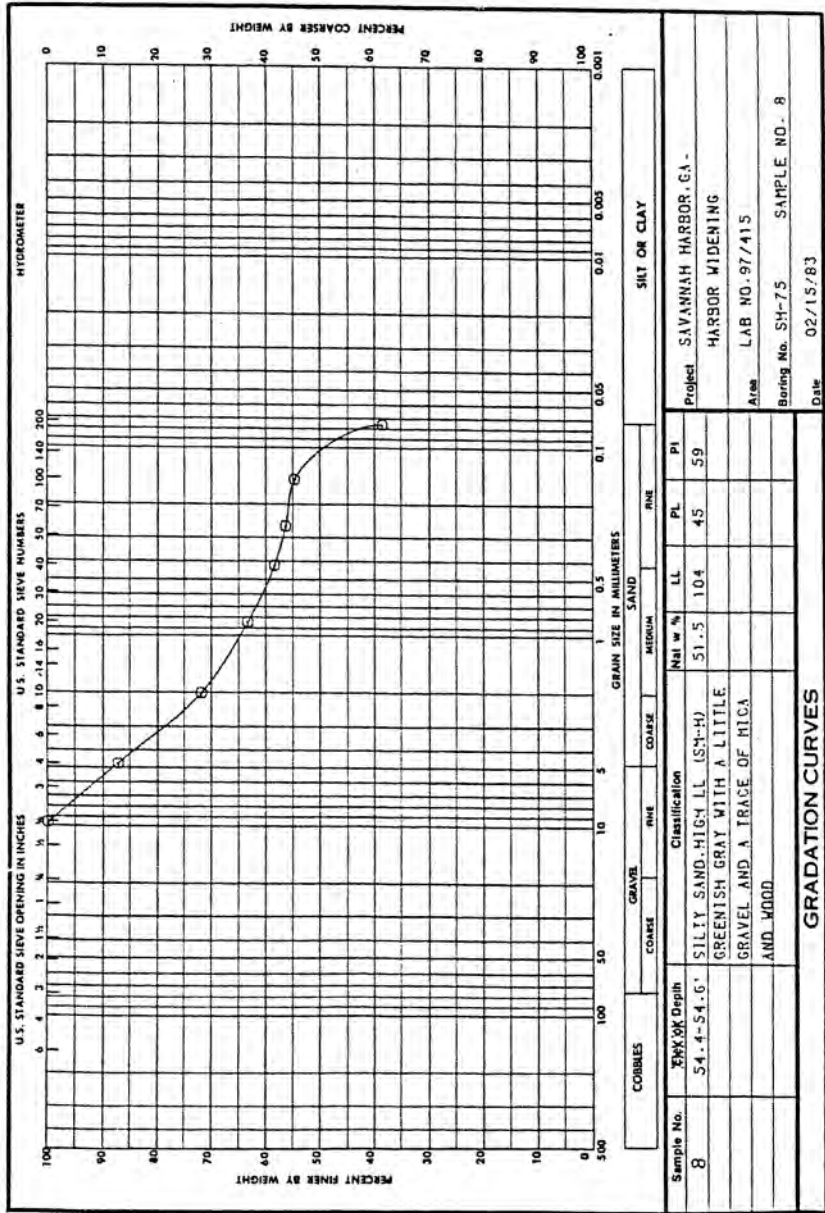
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504  
Req. No. EN-GS-83-54



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

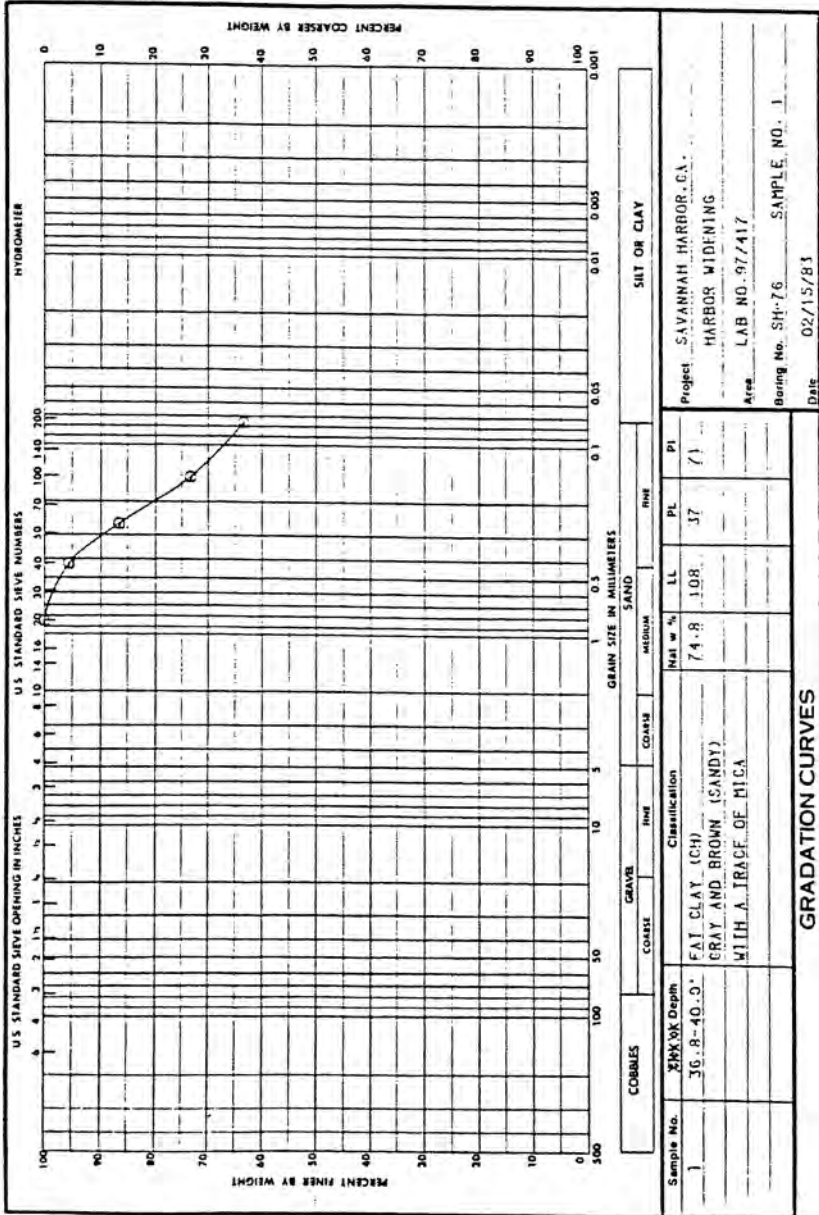
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Req. No. EN-GS-83-54



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA 30060

WO No 3504

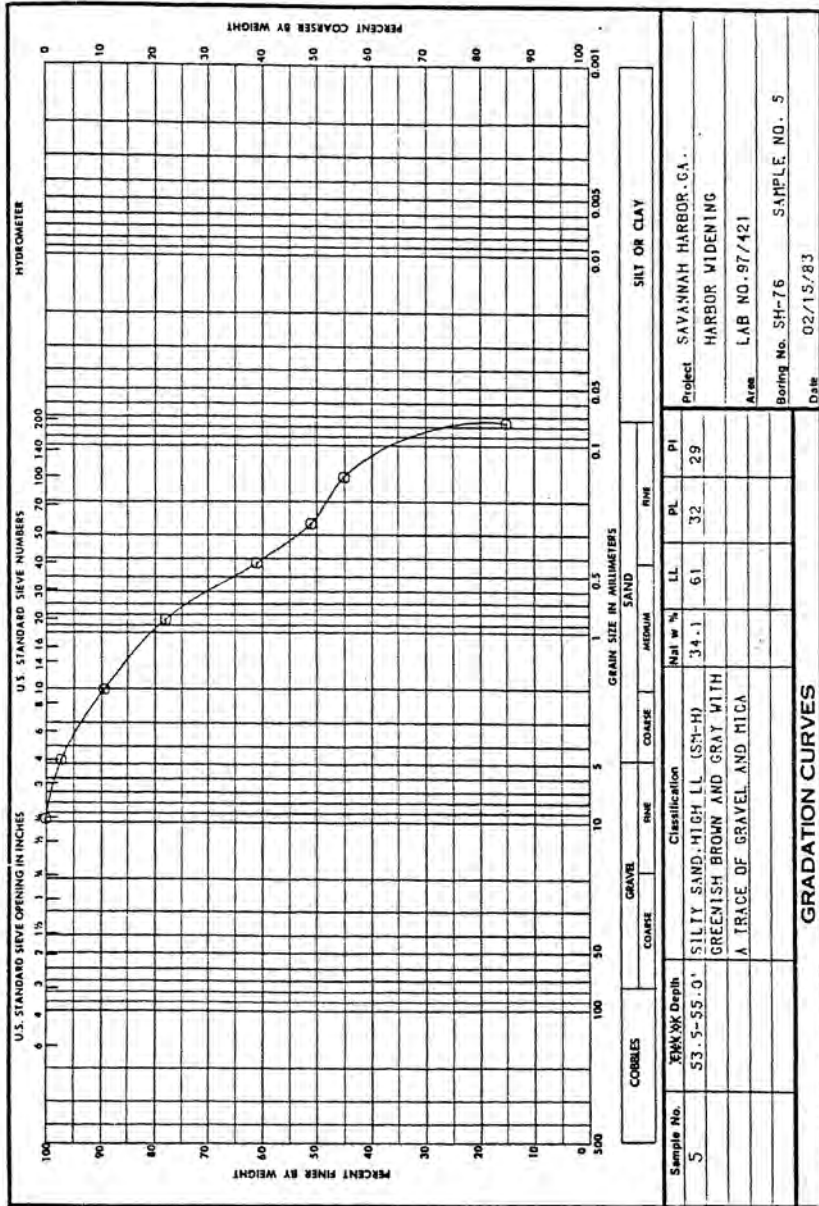
Req No EN-GS-83-54



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1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504  
Req. No. EN-GS-83-54

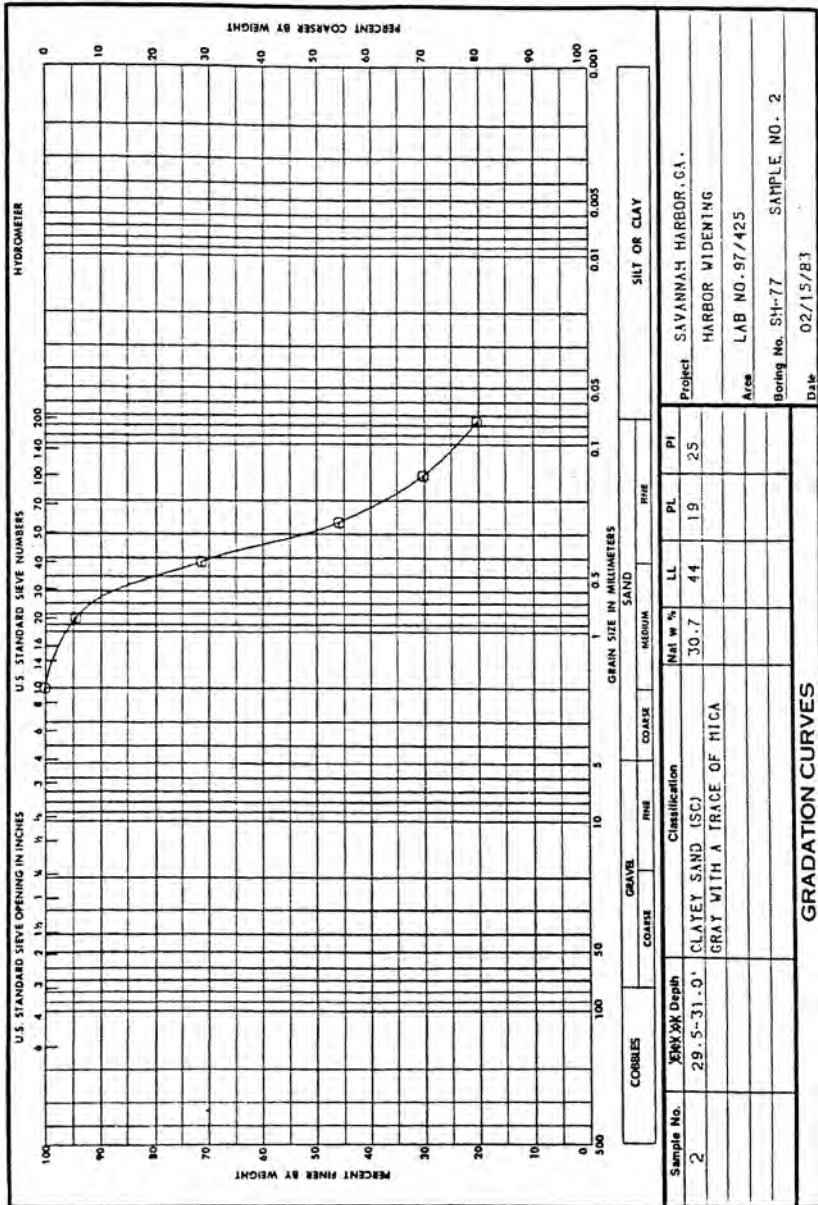


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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504

Req. No. EN-GS-83-54



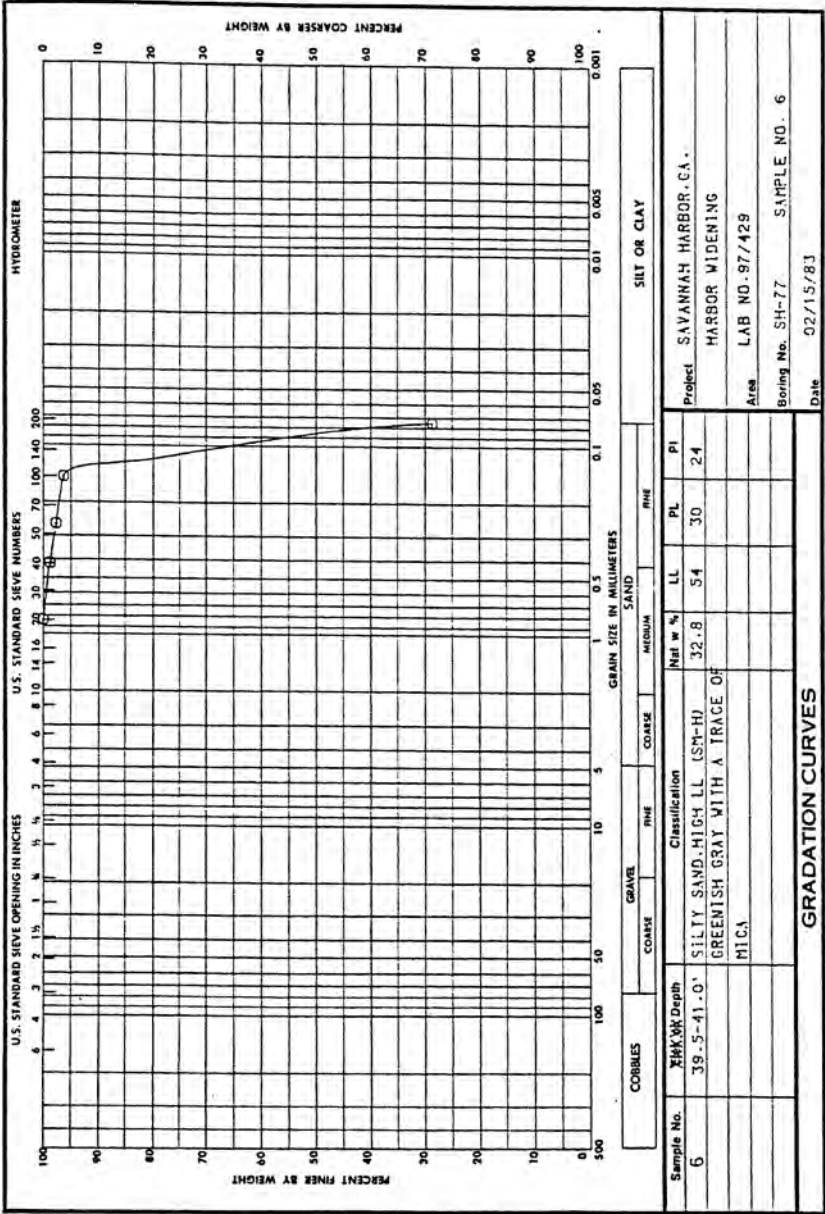
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.U. NO. 3304

Req. No. EN-6S-83-54



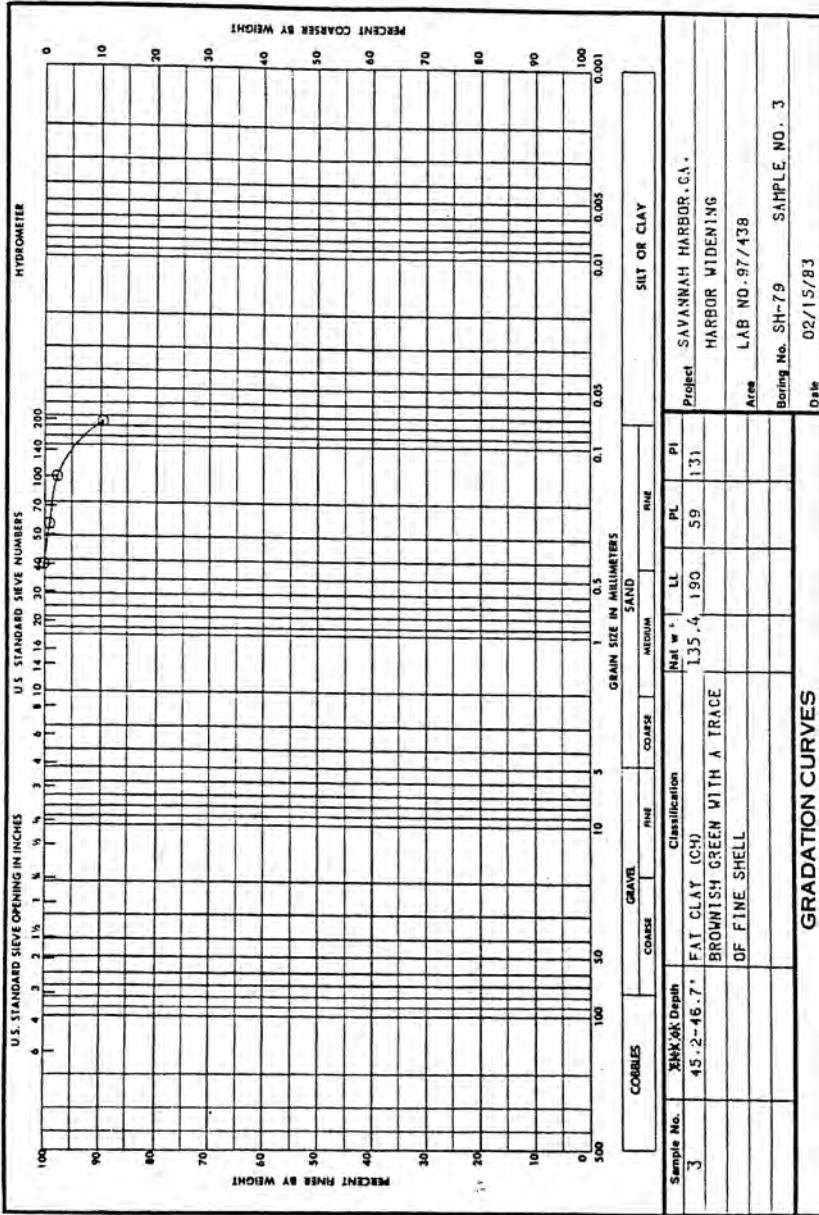
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504

Req. No. EN-GS-83-54

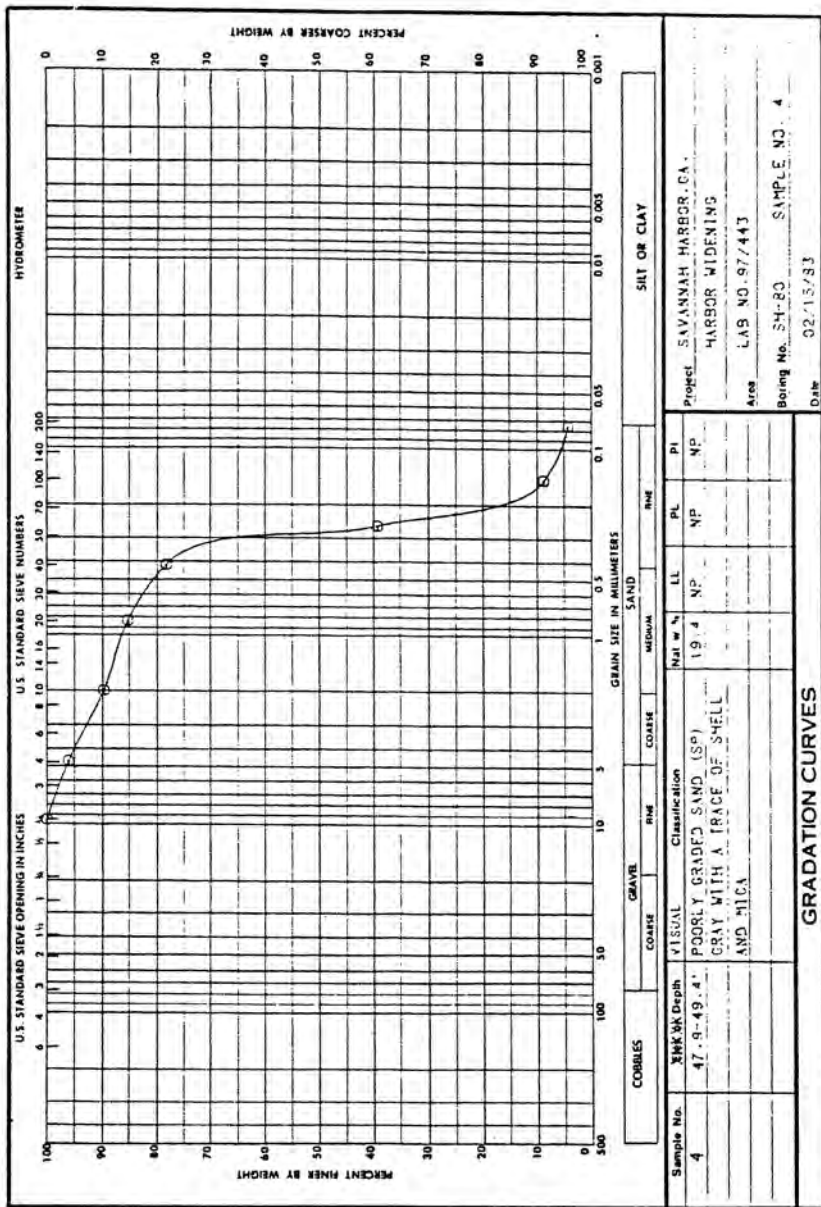


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3504

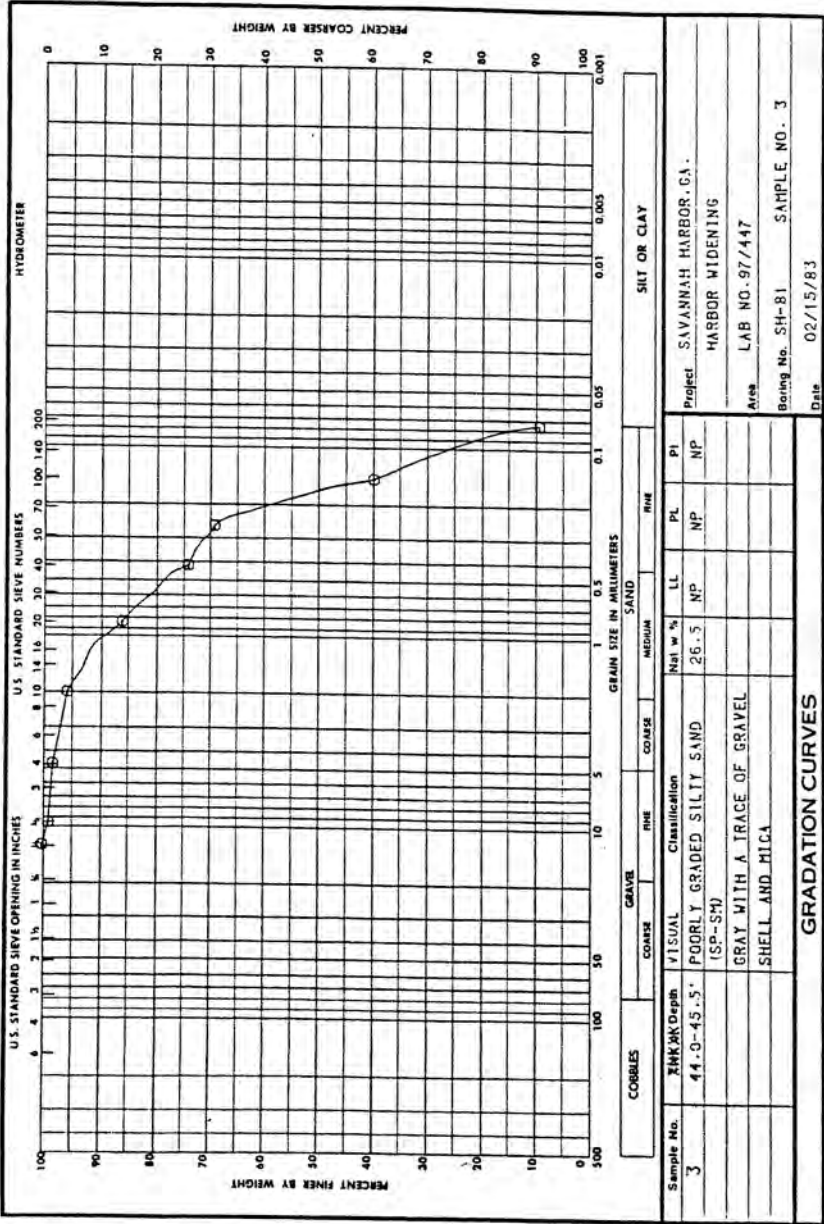
Reg No. EN-GS-83-54



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WO No 3504  
Req. No. EN-GS-83-54



ENG FORM 2087  
1 MAY 63

|                                                                                                                                                                                                                                                        |                 |                                                      |                    |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------|--------------------|-----------------------------|
| <b>GENERAL TEST REPORT</b><br><b>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC</b><br><b>CORPS OF ENGINEERS</b><br><b>MARIETTA, GEORGIA</b>                                                                                                   |                 | <b>DISTRICT/OFFICE</b><br>Savannah                   |                    |                             |
| <b>PROJECT</b><br>Savannah Harbor Widening                                                                                                                                                                                                             |                 | <b>DATE REPORTED</b><br>22 November 1983             |                    |                             |
|                                                                                                                                                                                                                                                        |                 | <b>WORK ORDER NO.</b><br>3778                        |                    |                             |
| <b>TYPE SAMPLE</b><br>Jar Samples of Disturbed Soils                                                                                                                                                                                                   |                 | <b>REQN. NO.</b><br>EN-GS-84-03                      |                    |                             |
| <b>SOURCE</b><br>Hole No.: SH-82 thru SH-101                                                                                                                                                                                                           |                 | <b>BASE UNIT COST</b><br>--                          |                    |                             |
| <b>FOR USE AS</b><br>Investigation                                                                                                                                                                                                                     |                 | <b>DATE SAMPLE RECEIVED</b><br>19 Sept - 17 Nov 1983 |                    |                             |
| <b>TESTED FOR</b><br>Lab Classification and Field Moisture                                                                                                                                                                                             |                 | <b>LAB NO.</b><br>97/449----598                      |                    |                             |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <div> <input type="checkbox"/> <b>MEETS SPECIFICATIONS</b> </div> <div>N/A</div> <div> <input type="checkbox"/> <b>FAILS SPECIFICATIONS (See below)</b> </div> </div> |                 |                                                      |                    |                             |
| <u>Lab No.</u>                                                                                                                                                                                                                                         | <u>Hole No.</u> | <u>Sample No.</u>                                    | <u>Depth (ft.)</u> | <u>Moisture Content (%)</u> |
| 97/                                                                                                                                                                                                                                                    |                 |                                                      |                    |                             |
| 451                                                                                                                                                                                                                                                    | SH-82           | 4                                                    | 34.8-36.3          | 11.8*                       |
| 452                                                                                                                                                                                                                                                    | SH-82           | 5                                                    | 37.8-39.3          | 8.2                         |
| 458                                                                                                                                                                                                                                                    | SH-83           | 2                                                    | 20.3-21.8          | 39.0*                       |
| 460                                                                                                                                                                                                                                                    | SH-83           | 4                                                    | 26.3-27.8          | 24.2*                       |
| 463                                                                                                                                                                                                                                                    | SH-83           | 7                                                    | 39.8-41.3          | 69.9*                       |
| 464                                                                                                                                                                                                                                                    | SH-83           | 8                                                    | 44.3-45.8          | 72.9                        |
| 466                                                                                                                                                                                                                                                    | SH-84           | 2                                                    | 29.0-30.5          | 18.0*                       |
| 467                                                                                                                                                                                                                                                    | SH-84           | 3                                                    | 30.5-32.0          | 17.9*                       |
| 470                                                                                                                                                                                                                                                    | SH-84           | 6                                                    | 38.0-39.5          | 56.2                        |
| 471                                                                                                                                                                                                                                                    | SH-84           | 7                                                    | 39.5-41.0          | 52.0*                       |
| 472                                                                                                                                                                                                                                                    | SH-84           | 8                                                    | 41.0-42.5          | 50.5                        |
| 474                                                                                                                                                                                                                                                    | SH-84           | 10                                                   | 47.1-48.6          | 74.2*                       |
| 477                                                                                                                                                                                                                                                    | SH-85           | 2                                                    | 23.0-24.5          | 18.6*                       |
| 481                                                                                                                                                                                                                                                    | SH-85           | 6                                                    | 32.0-33.5          | 25.7*                       |
| 482                                                                                                                                                                                                                                                    | SH-85           | 7                                                    | 39.5-41.0          | 51.7*                       |
| 484                                                                                                                                                                                                                                                    | SH-85           | 9                                                    | 44.0-45.5          | 44.3                        |
| 485                                                                                                                                                                                                                                                    | SH-85           | 10                                                   | 45.5-47.0          | 63.6*                       |
| 487                                                                                                                                                                                                                                                    | SH-85           | 12                                                   | 48.5-50.0          | 69.8                        |
| 492                                                                                                                                                                                                                                                    | SH-86           | 5                                                    | 43.5-45.0          | 21.7*                       |
| <b>REMARKS</b><br><br>*See lab classification data on ENG Form 2087.                                                                                                                                                                                   |                 |                                                      |                    |                             |
| <b>REPORTED BY</b><br><input type="checkbox"/> PHONE <input type="checkbox"/> WIRE                                                                                                                                                                     |                 | <b>TESTED BY</b><br>JK, HDS                          |                    |                             |
| <b>DATE</b><br>_____                                                                                                                                                                                                                                   |                 | <b>CHECKED BY</b><br>ES                              |                    |                             |
|                                                                                                                                                                                                                                                        |                 | <b>SAMPLED BY</b><br>District                        |                    |                             |

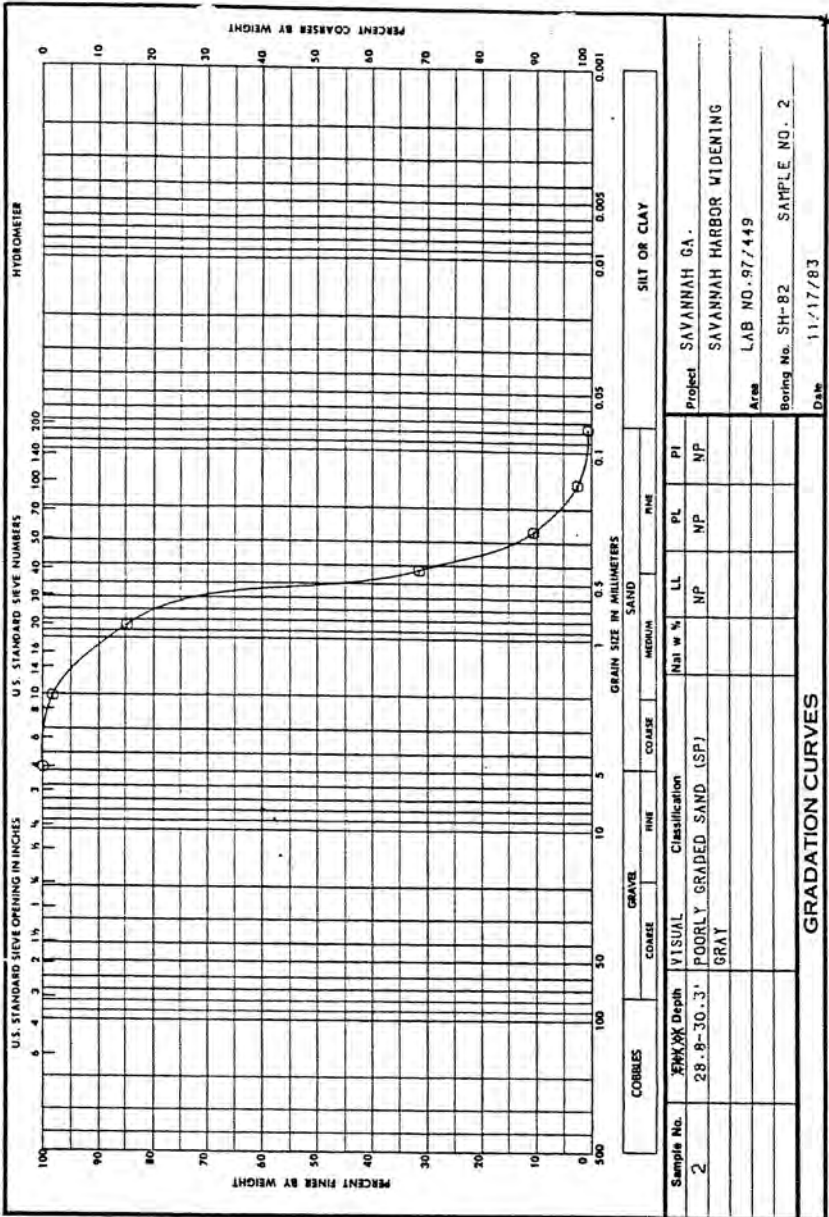
## GENERAL TEST REPORT (Continued)

( SOILS )PROJECT Savannah Harbor WideningLAB NO. 97/449---598WORK ORDER NO. 3778DATE 22 Nov 1983REQ. NO. FN-GS-84-03

| Lab No. | Hole No. | Sample No. | Depth (ft) | Moisture Content (%) |
|---------|----------|------------|------------|----------------------|
| 97/     |          |            |            |                      |
| 497     | SH-87    | 3          | 25.0-26.5  | 22.6*                |
| 503     | SH-87    | 9          | 48.5-50.0  | 40.7*                |
| 509     | SH-88    | 6          | 45.7-47.2  | 98.4*                |
| 510     | SH-88    | 7          | 48.7-50.2  | 47.9                 |
| 511     | SH-89    | 1          | 34.1-36.5  | 147.8*               |
| 513     | SH-89    | 3          | 38.5-40.0  | 37.8*                |
| 515     | SH-89    | 5          | 44.5-46.0  | 78.2*                |
| 516     | SH-89    | 6          | 49.0-50.5  | 83.9                 |
| 517     | SH-90    | 1          | 40.7-40.9  | 158.5                |
| 518     | SH-90    | 2          | 40.9-42.4  | 46.1*                |
| 520     | SH-90    | 4          | 45.5-47.0  | 64.9*                |
| 521     | SH-90    | 5          | 48.5-50.0  | 46.1                 |
| 522     | SH-91    | 1          | 9.2-10.2   | 100.4                |
| 524     | SH-91    | 3          | 19.0-20.5  | 25.5*                |
| 526     | SH-91    | 5          | 29.5-31.0  | 62.5*                |
| 528     | SH-91    | 7          | 34.0-35.5  | 31.3*                |
| 529     | SH-91    | 8          | 38.5-40.0  | 42.5                 |
| 531     | SH-92    | 1          | 35.5-36.8  | 139.5*               |
| 535     | SH-92    | 5          | 48.5-49.0  | 47.8*                |
| 536     | SH-92    | 6          | 49.0-50.5  | 49.5                 |
| 537     | SH-93    | 1          | 11.1-12.6  | 149.4                |
| 538     | SH-93    | 2          | 13.0-14.5  | 133.9*               |
| 540     | SH-93    | 4          | 19.6-21.1  | 31.8*                |
| 541     | SH-93    | 5          | 21.0-22.5  | 54.4                 |
| 542     | SH-93    | 6          | 24.0-25.5  | 93.3*                |
| 544     | SH-93    | 8          | 34.5-36.0  | 42.5*                |
| 549     | SH-94    | 1          | 41.2-42.7  | 137.0*               |
| 550     | SH-94    | 2          | 44.0-45.5  | 39.3*                |
| 551     | SH-94    | 3          | 48.5-50.0  | 39.3                 |
| 552     | SH-95    | 1          | 18.1-19.6  | 38.5                 |
| 553     | SH-95    | 2          | 21.0-22.0  | 39.7                 |
| 554     | SH-95    | 3          | 27.0-28.5  | 40.0*                |
| 555     | SH-95    | 4          | 28.5-30.0  | 52.8*                |
| 605     | SH-95    | 9          | 45.0-46.5  | 30.2*                |

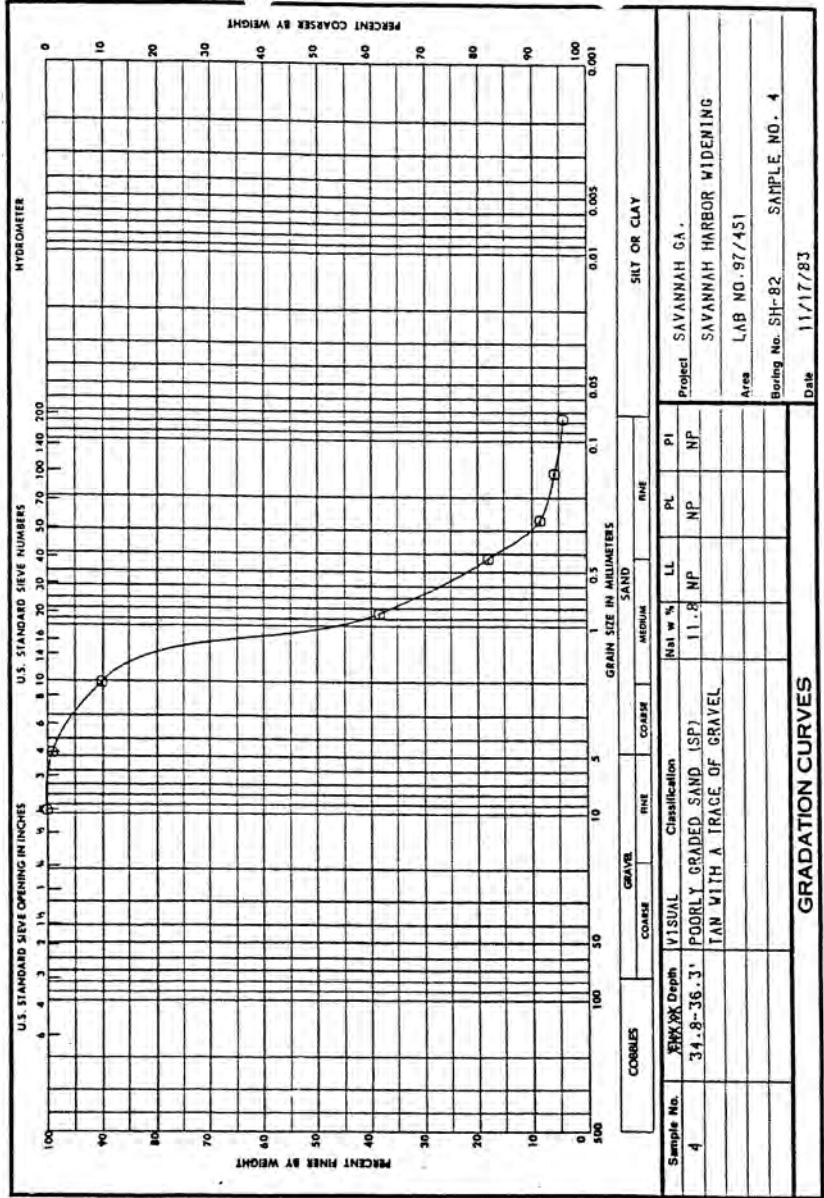
\*See lab classification data on ENG Form 2087.

Req. No. EN-GS-84-03



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

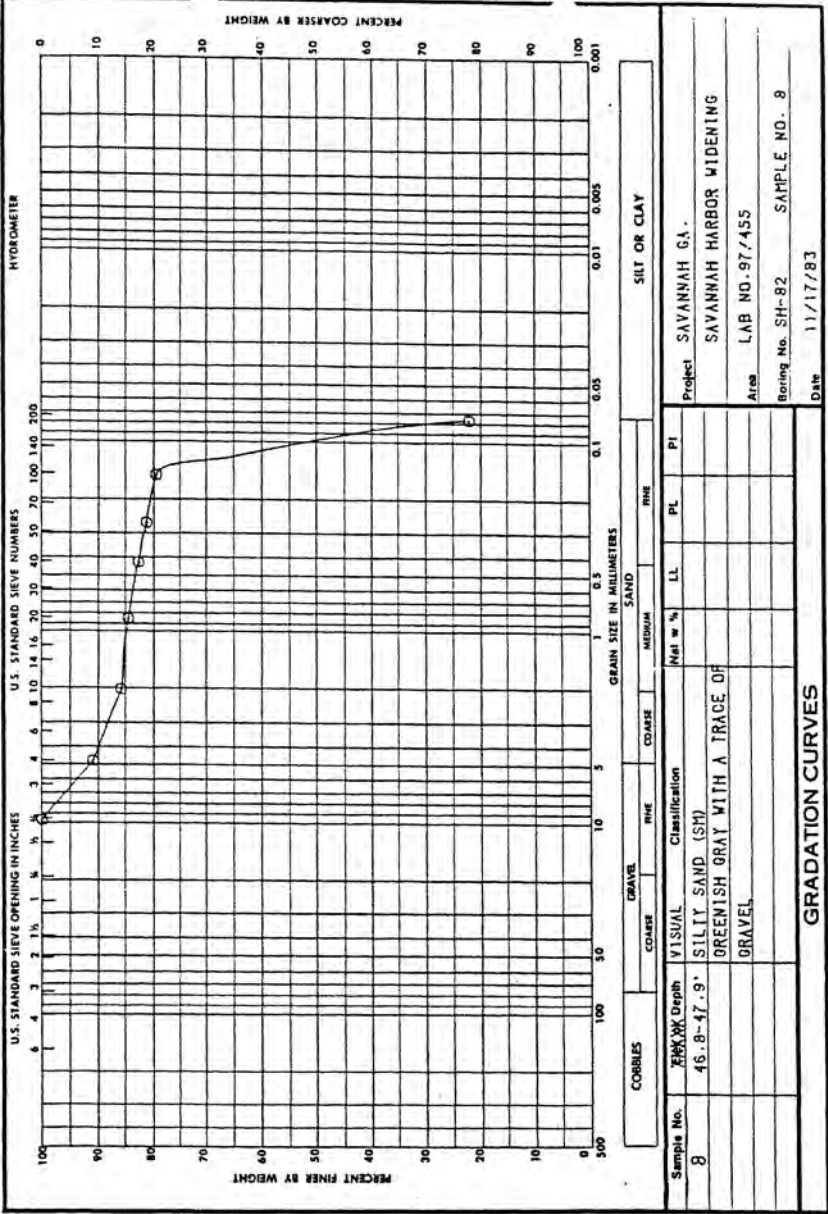
W.O. No. 3778  
Req. No. EN-GS-84-03



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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-03

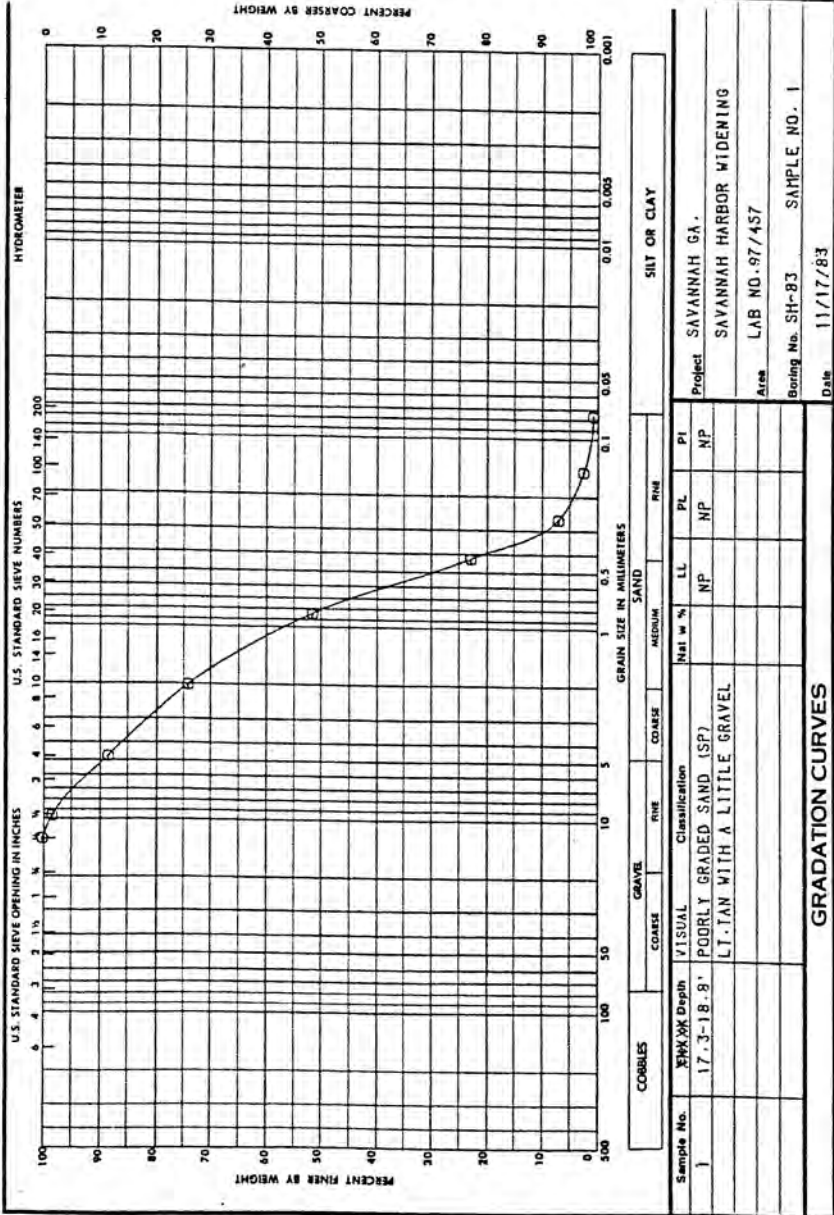


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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. E.N-GS-84-03

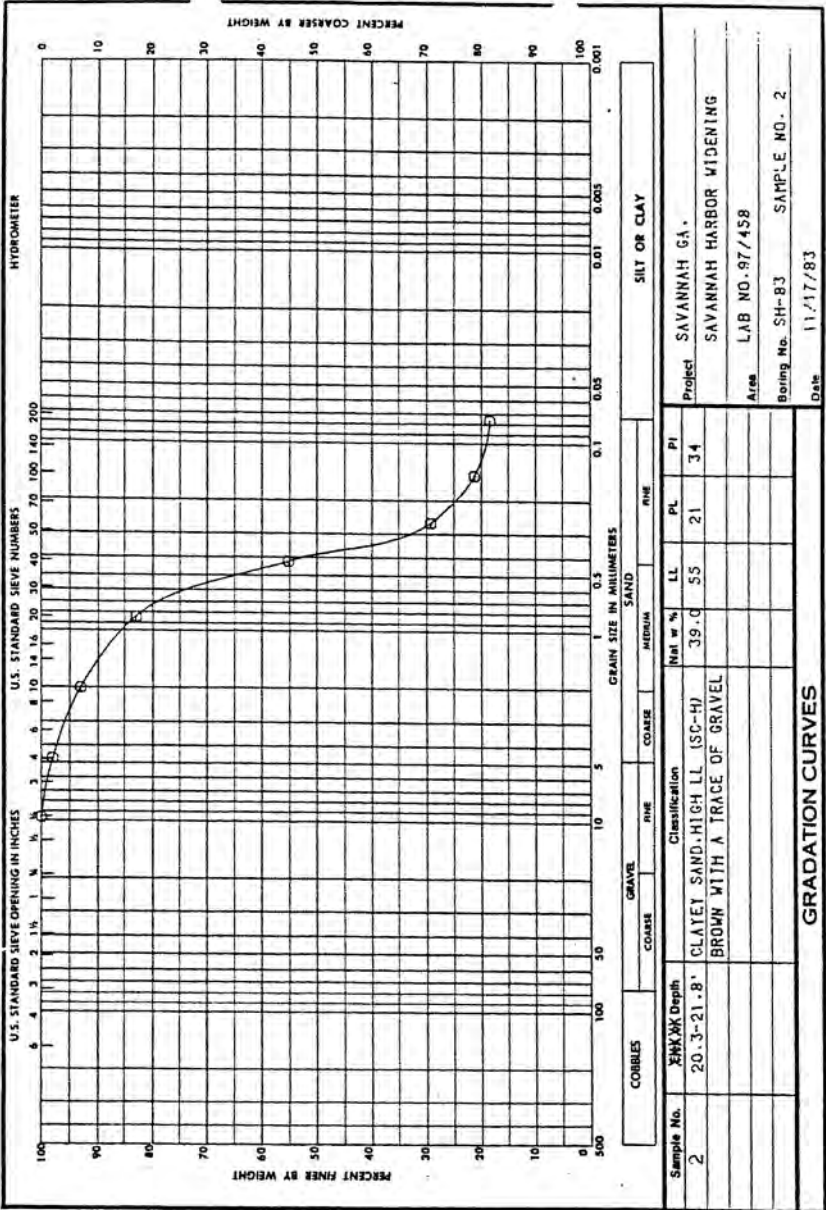


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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

TS-1, 100, 3116

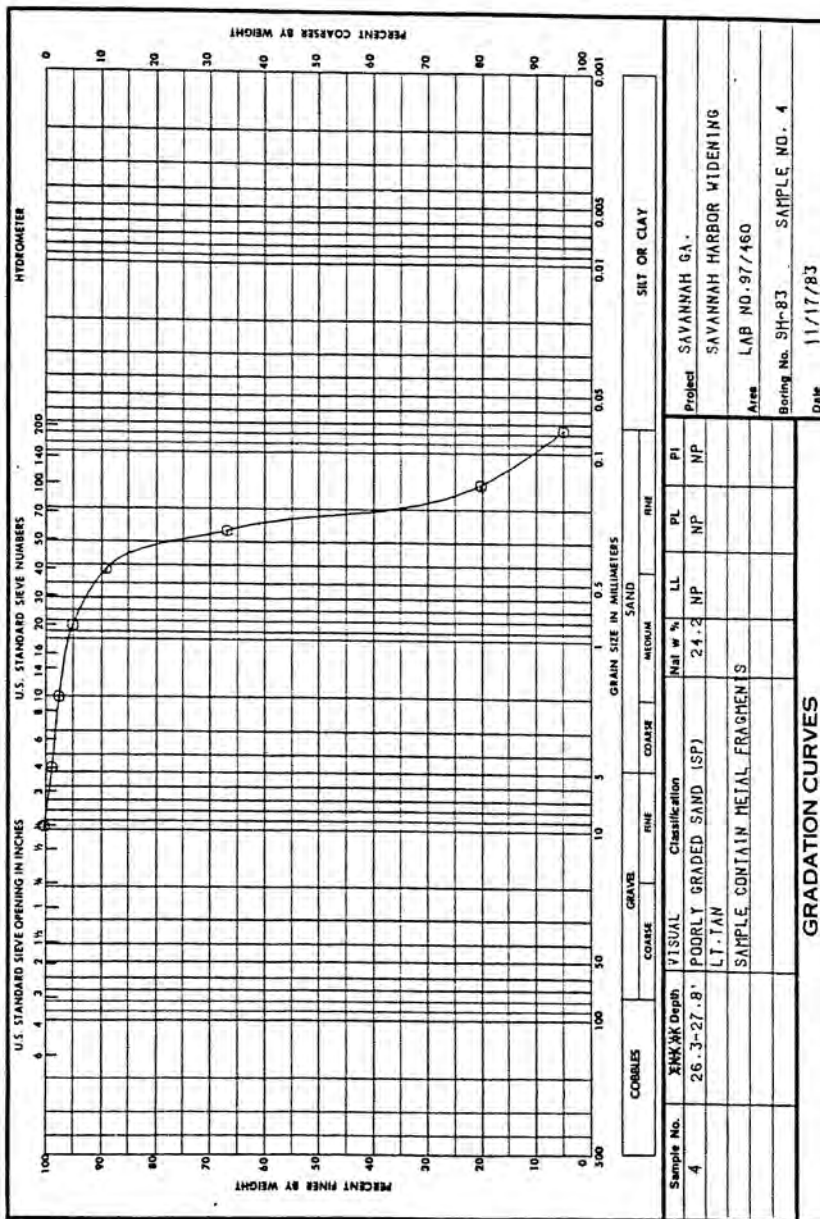
Req. No. EN-GS-84-03



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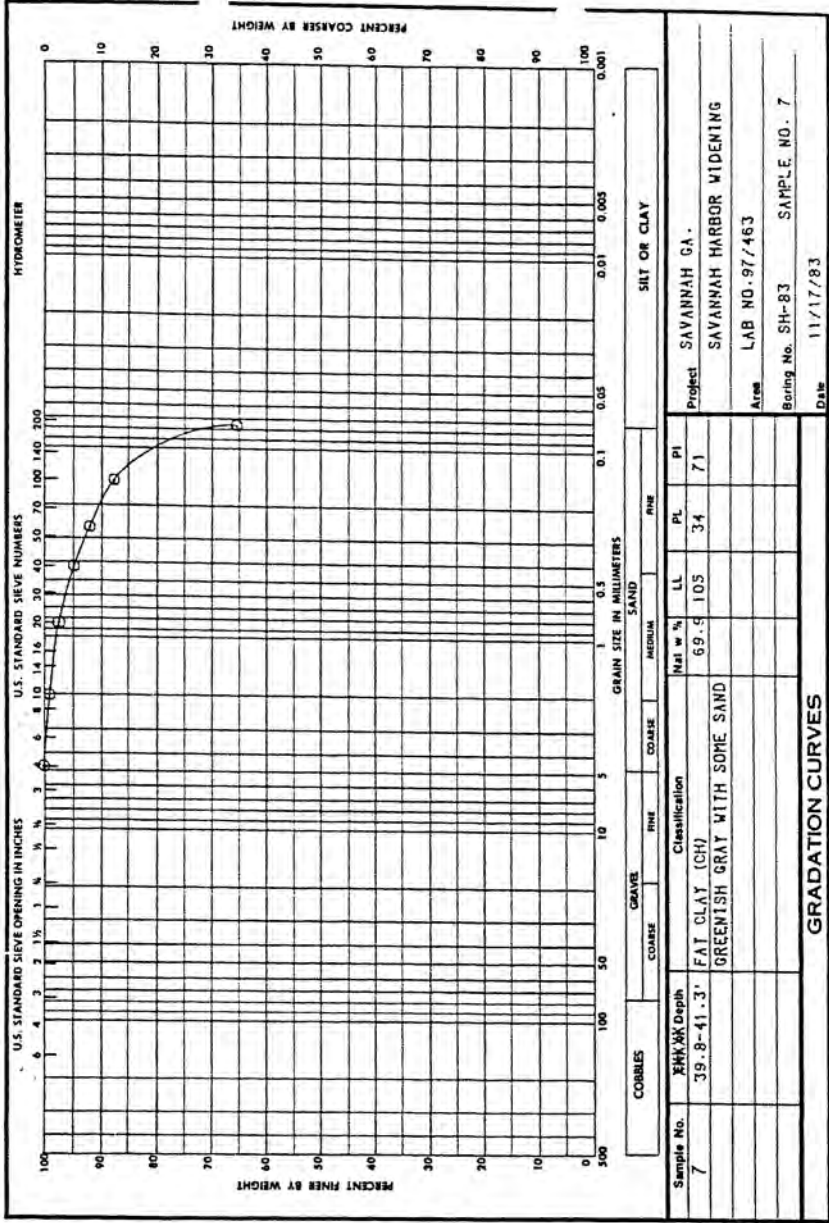
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778  
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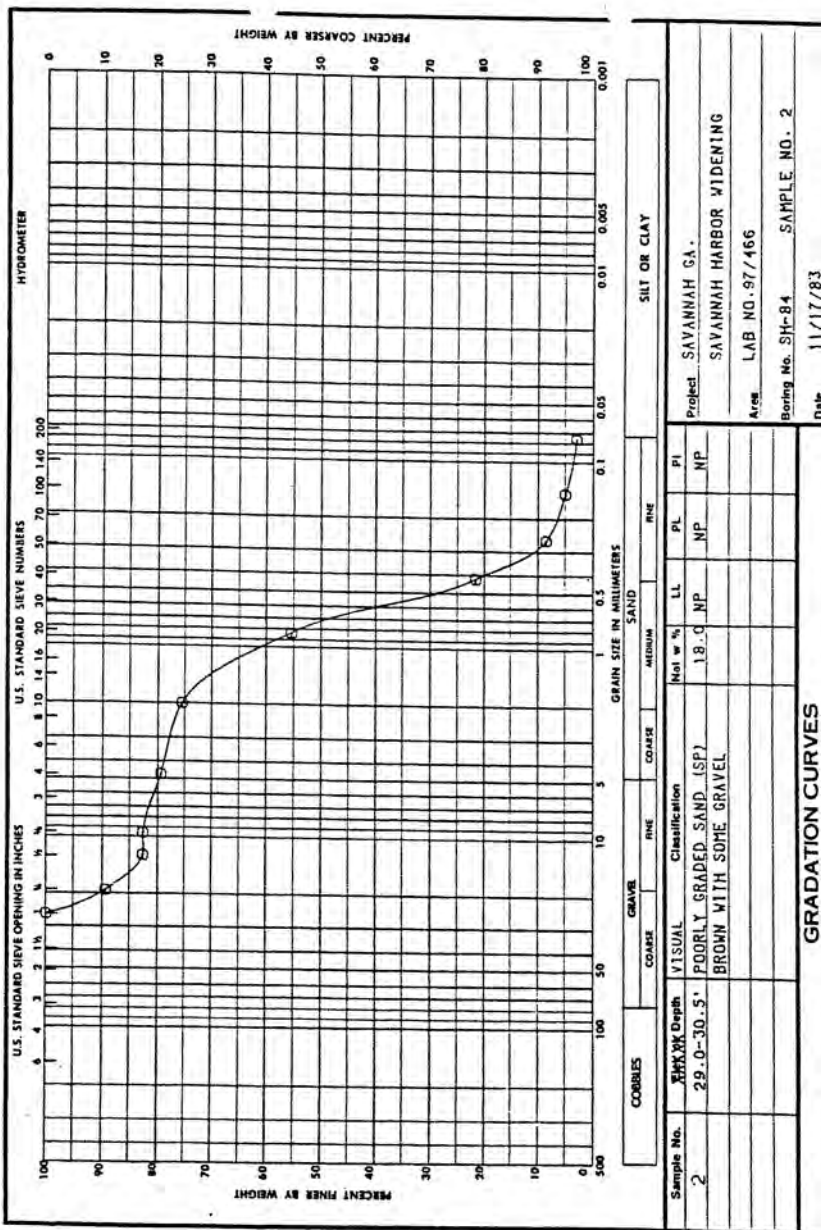
Req. No. EN-GS-84-03



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

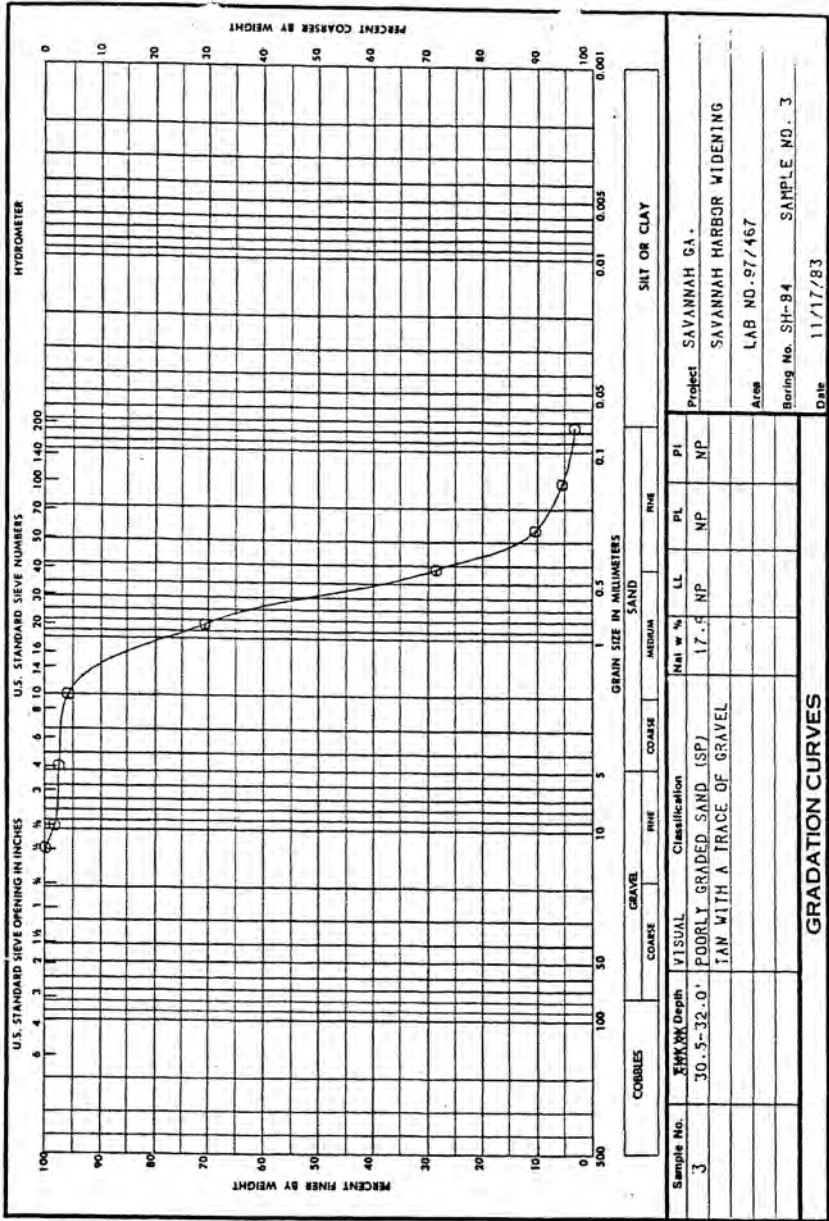
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1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

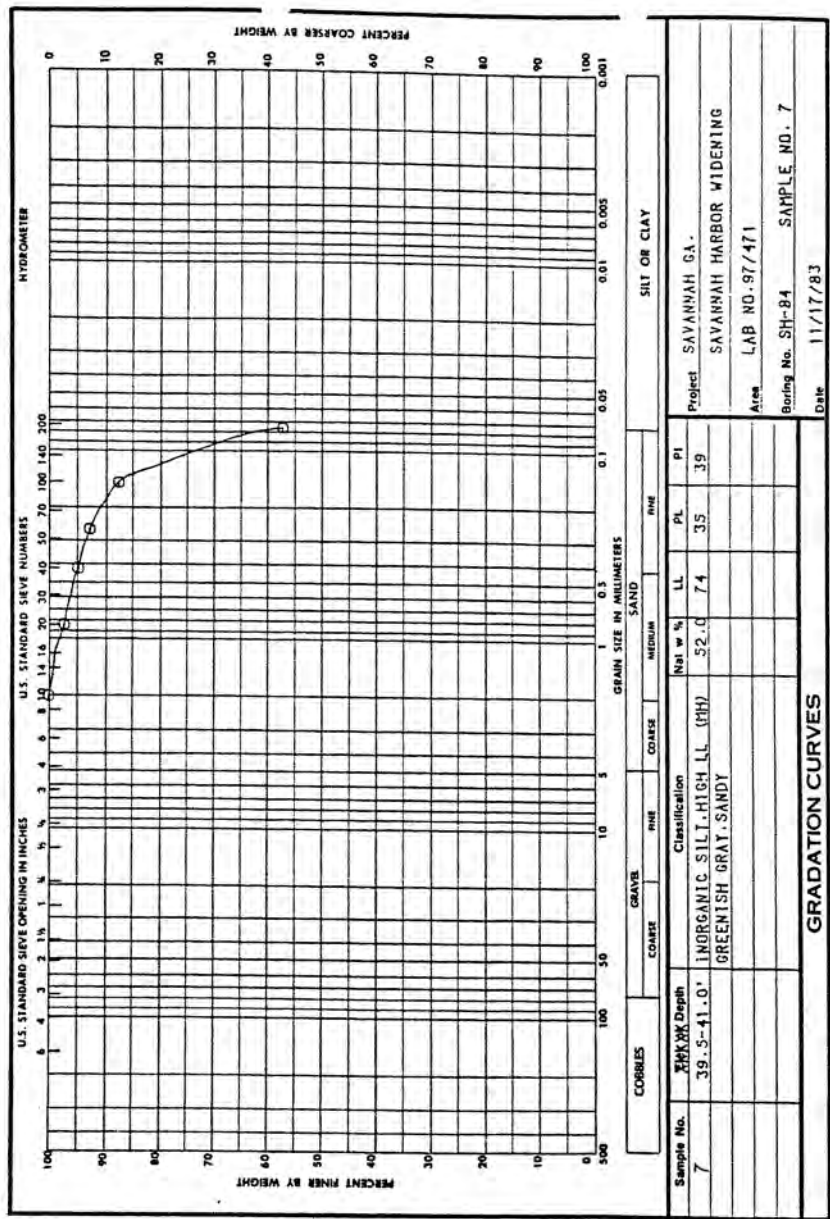
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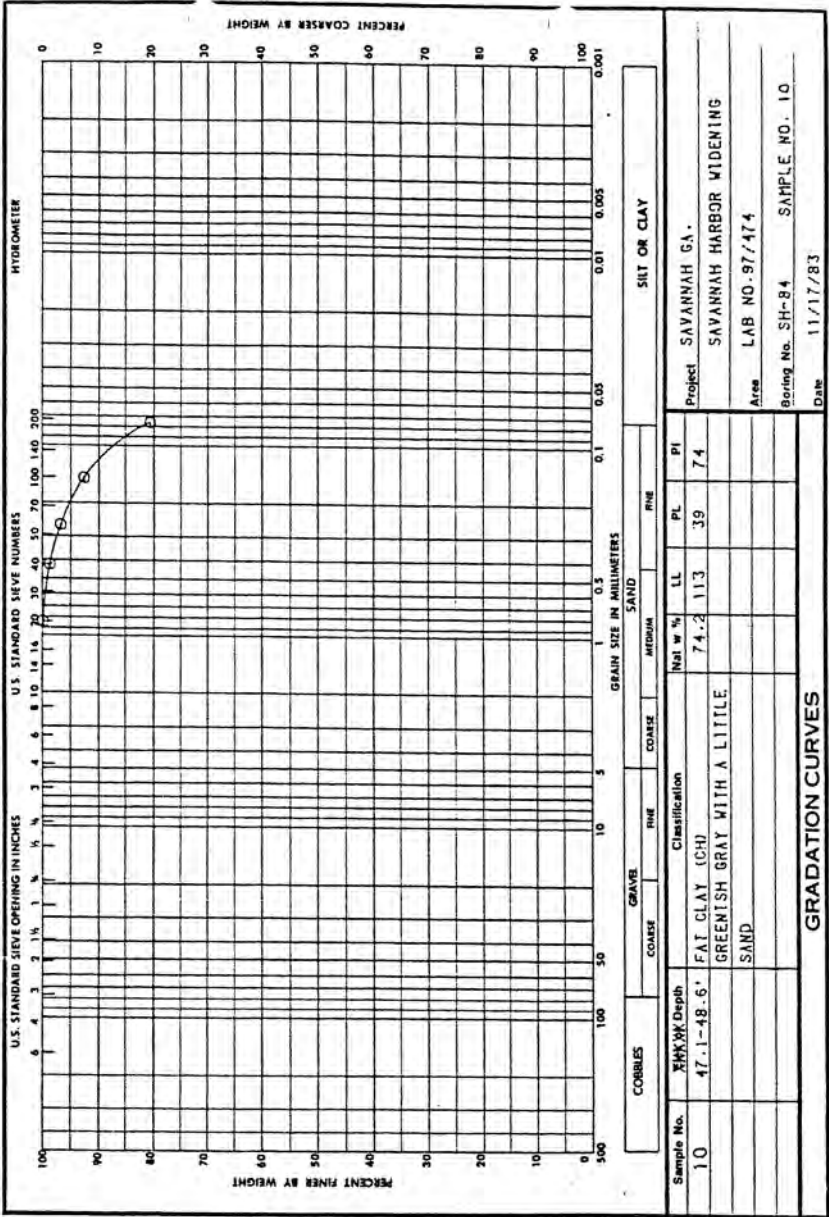
ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

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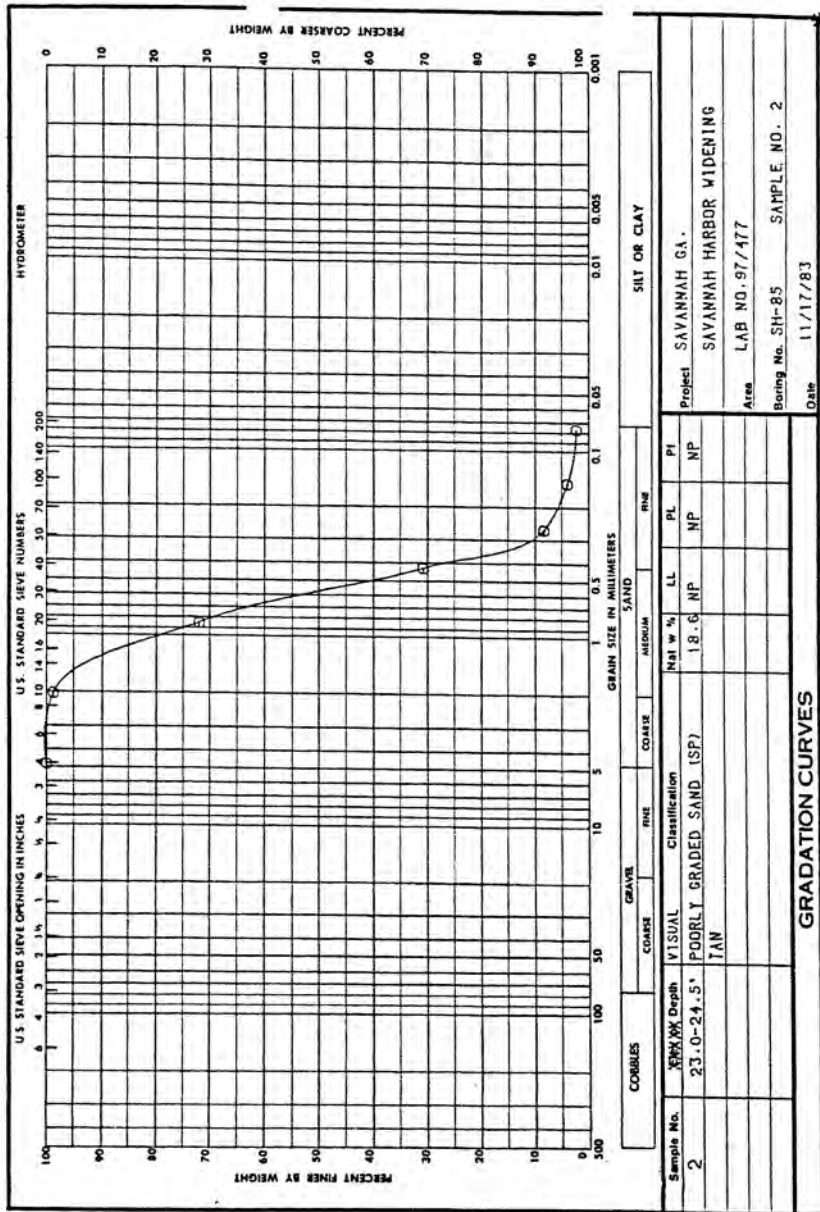




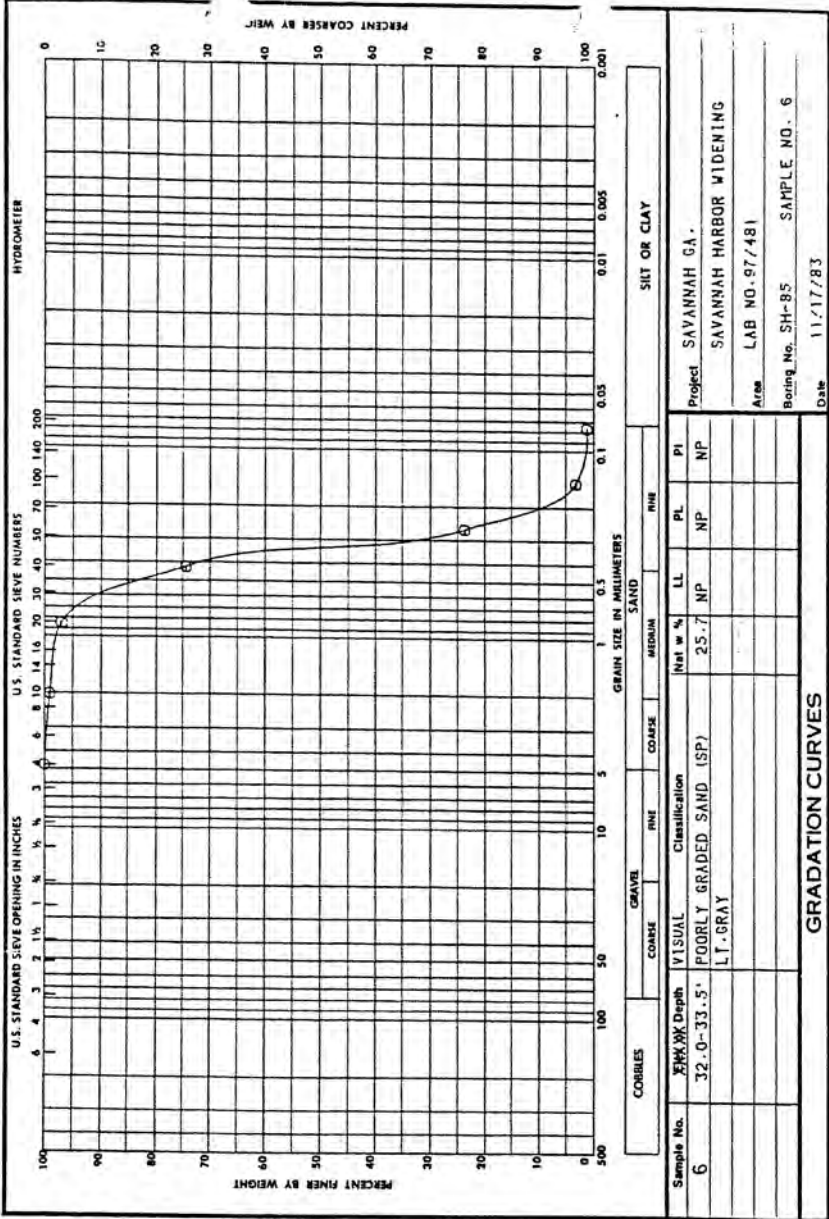


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

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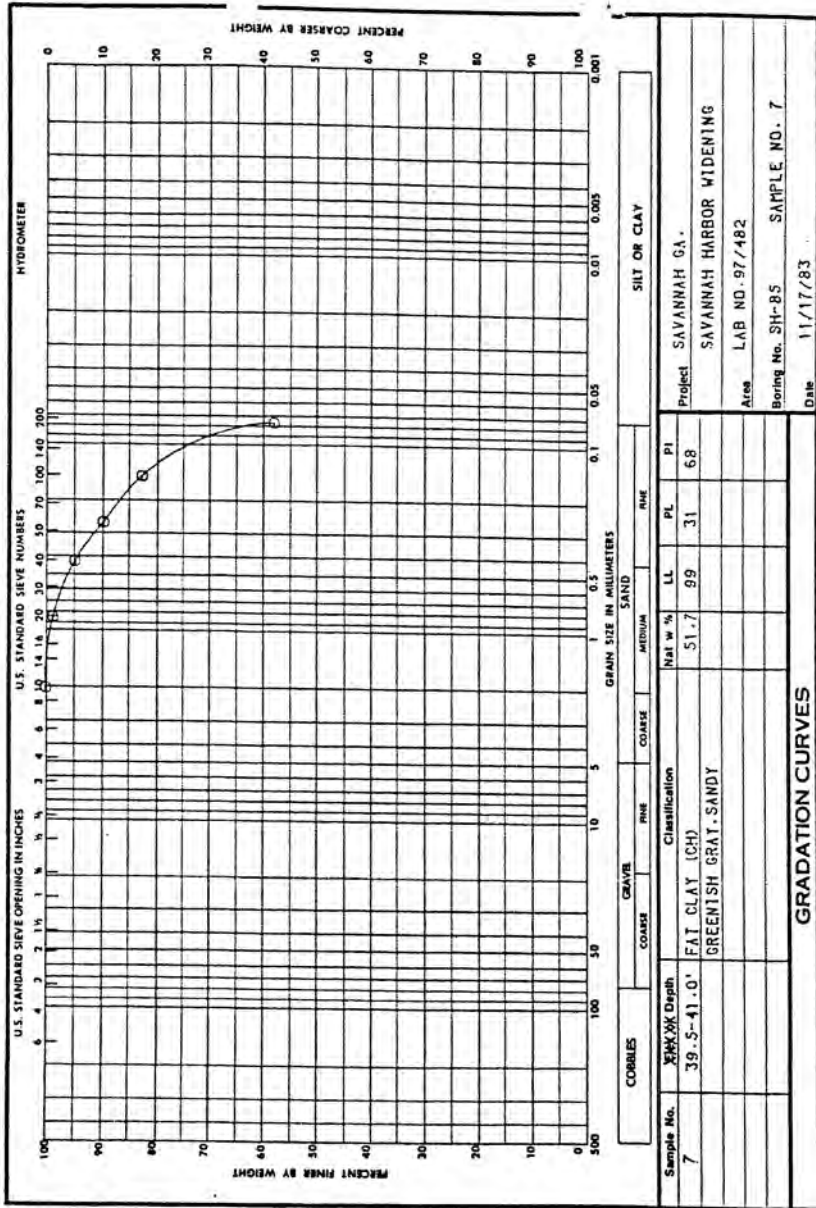
ENG 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

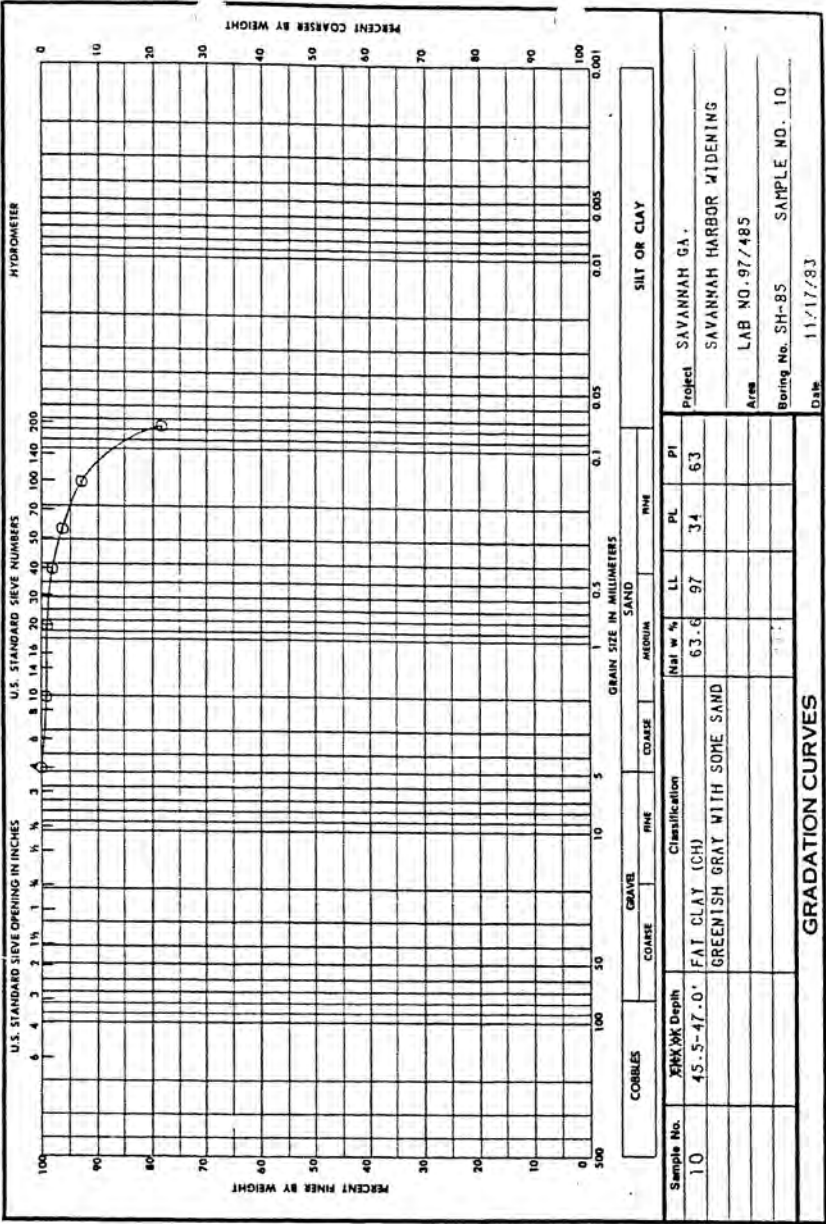
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-03

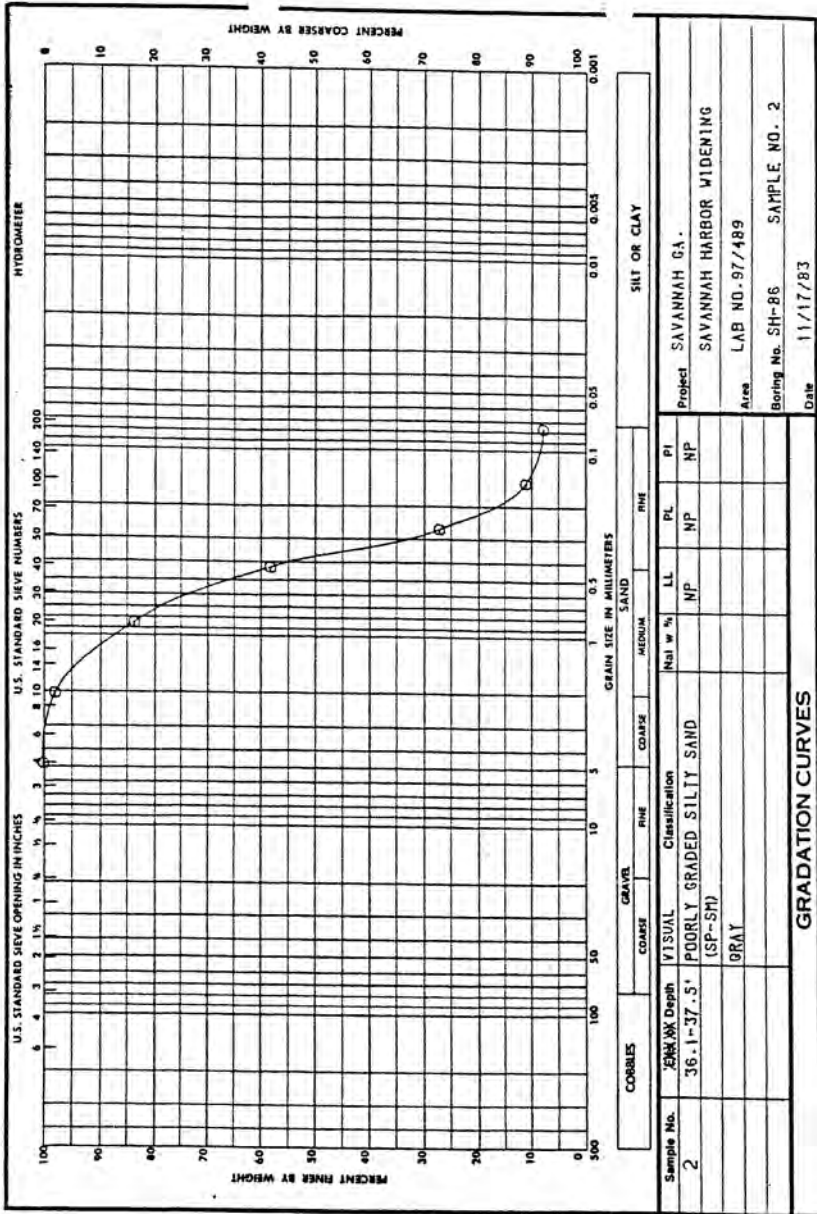


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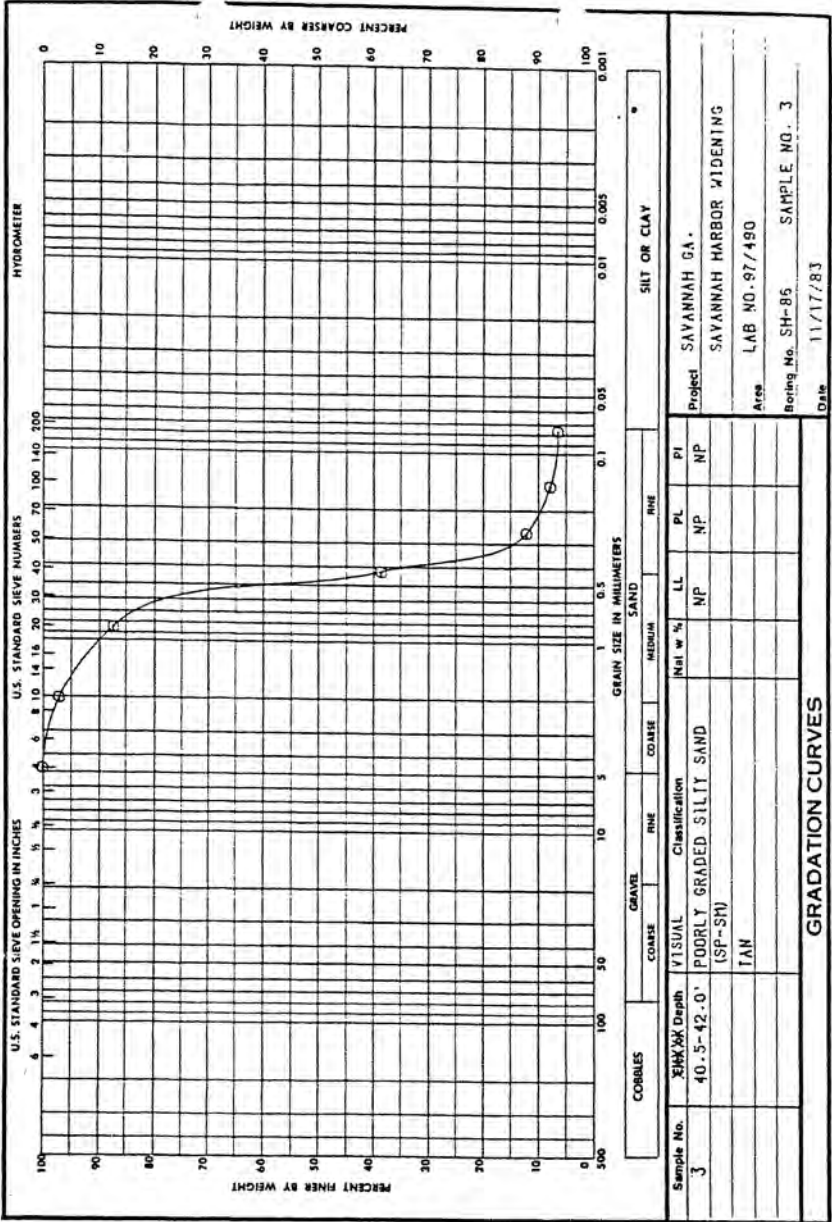
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-65-84-03



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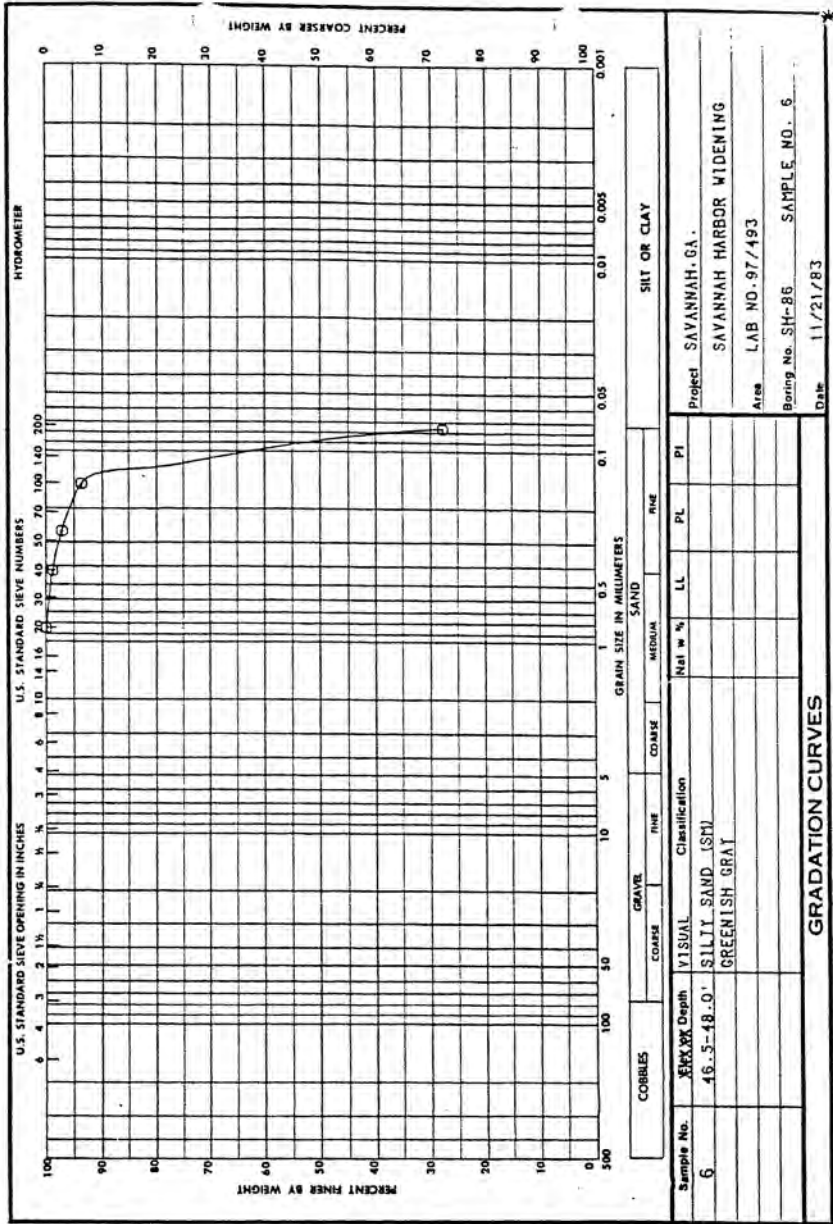






DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-03



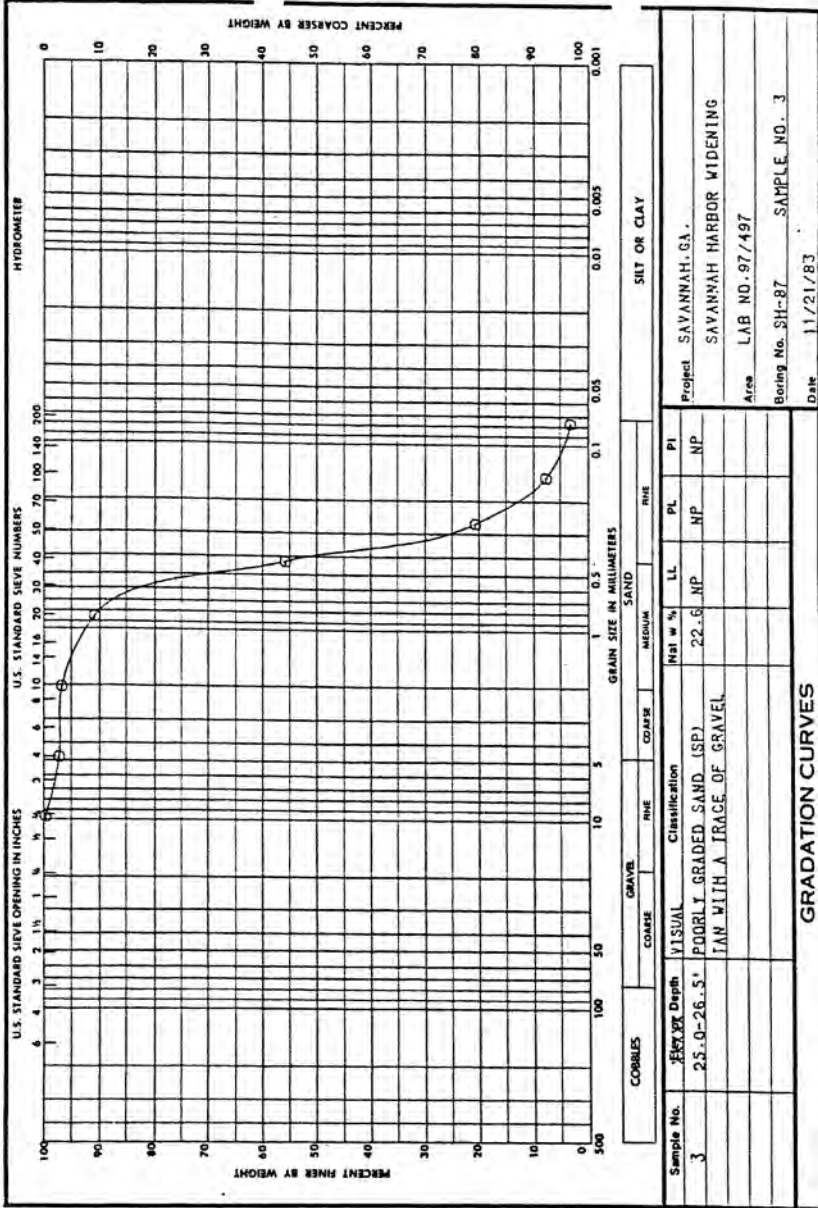
ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

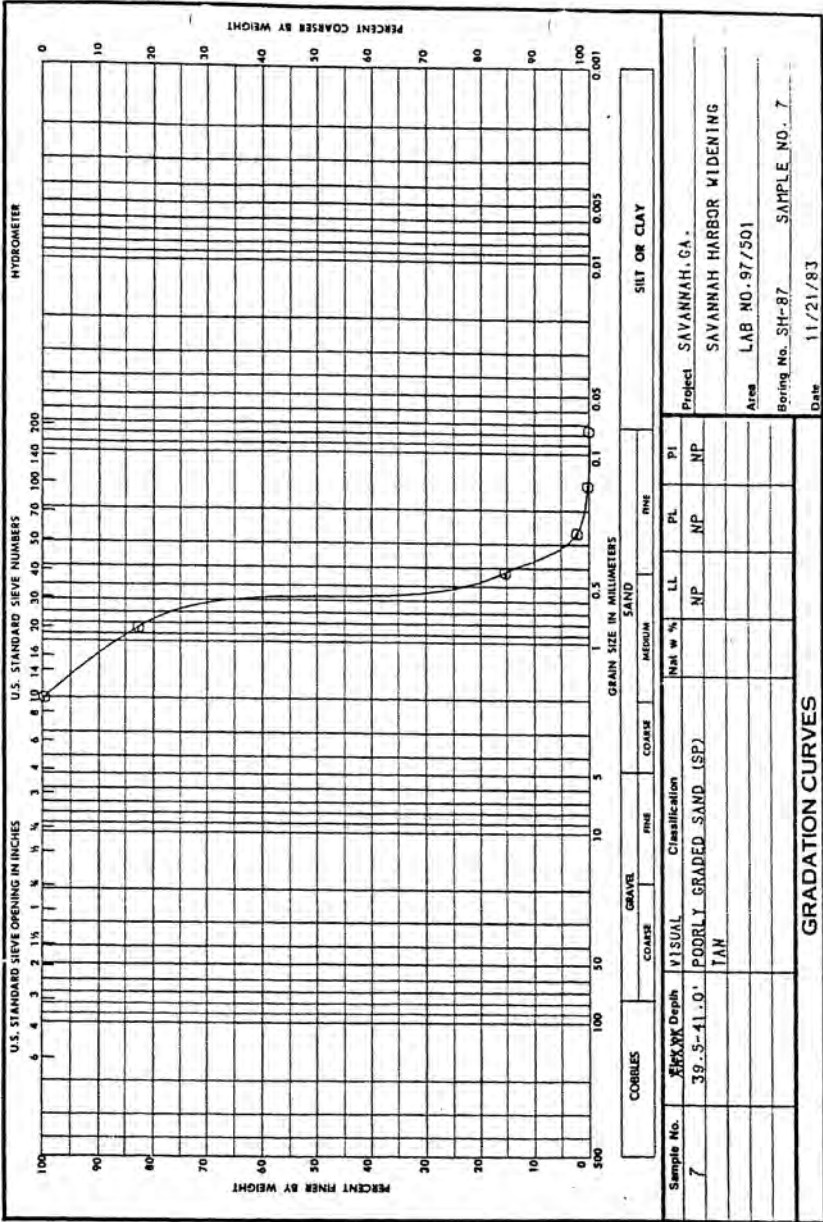
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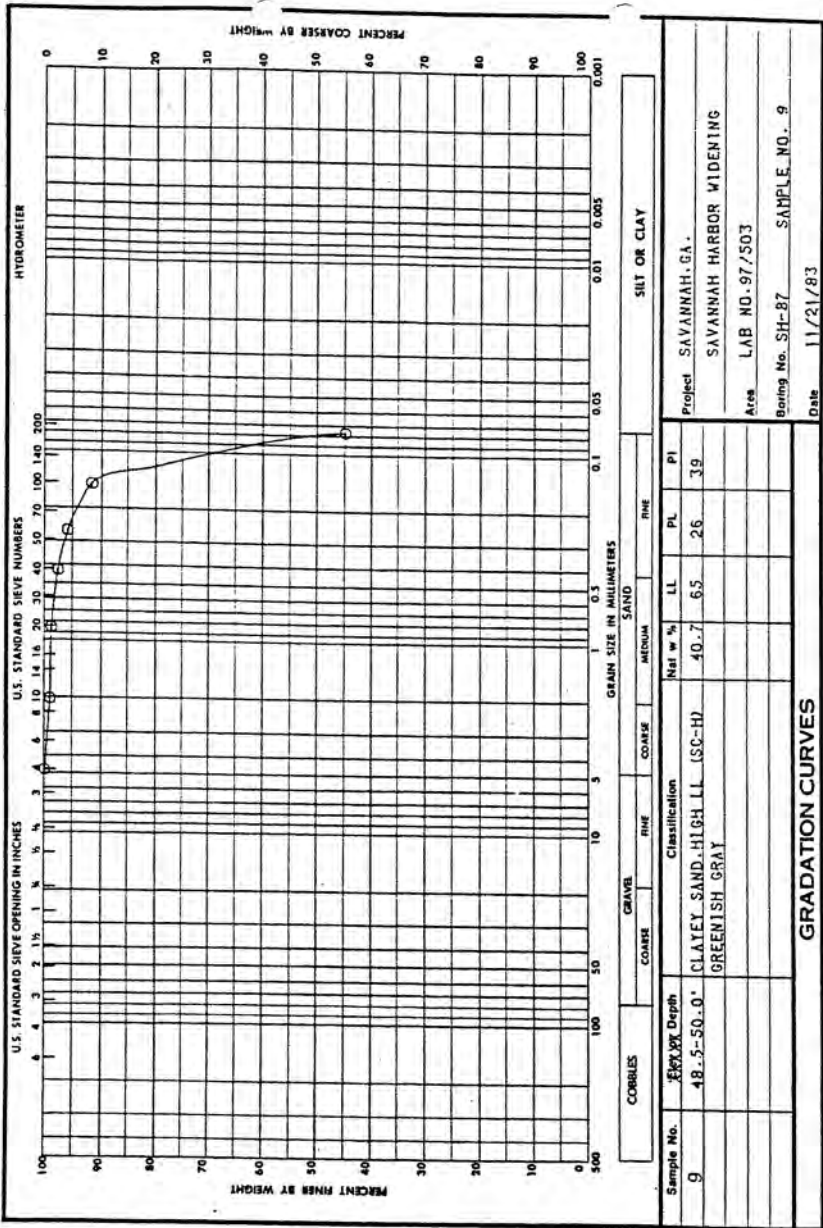
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-03



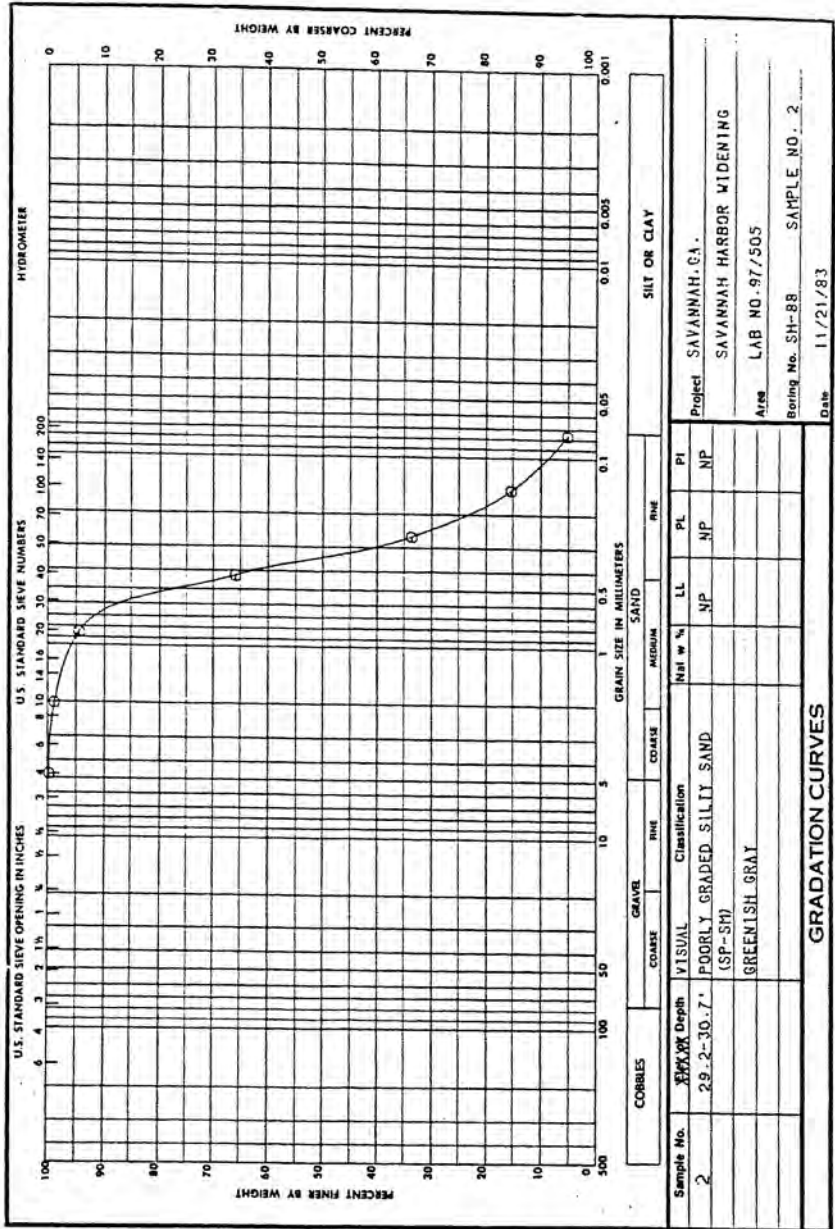
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.D. No. 3778  
Req. No. EN-GS-84-03



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-Q3



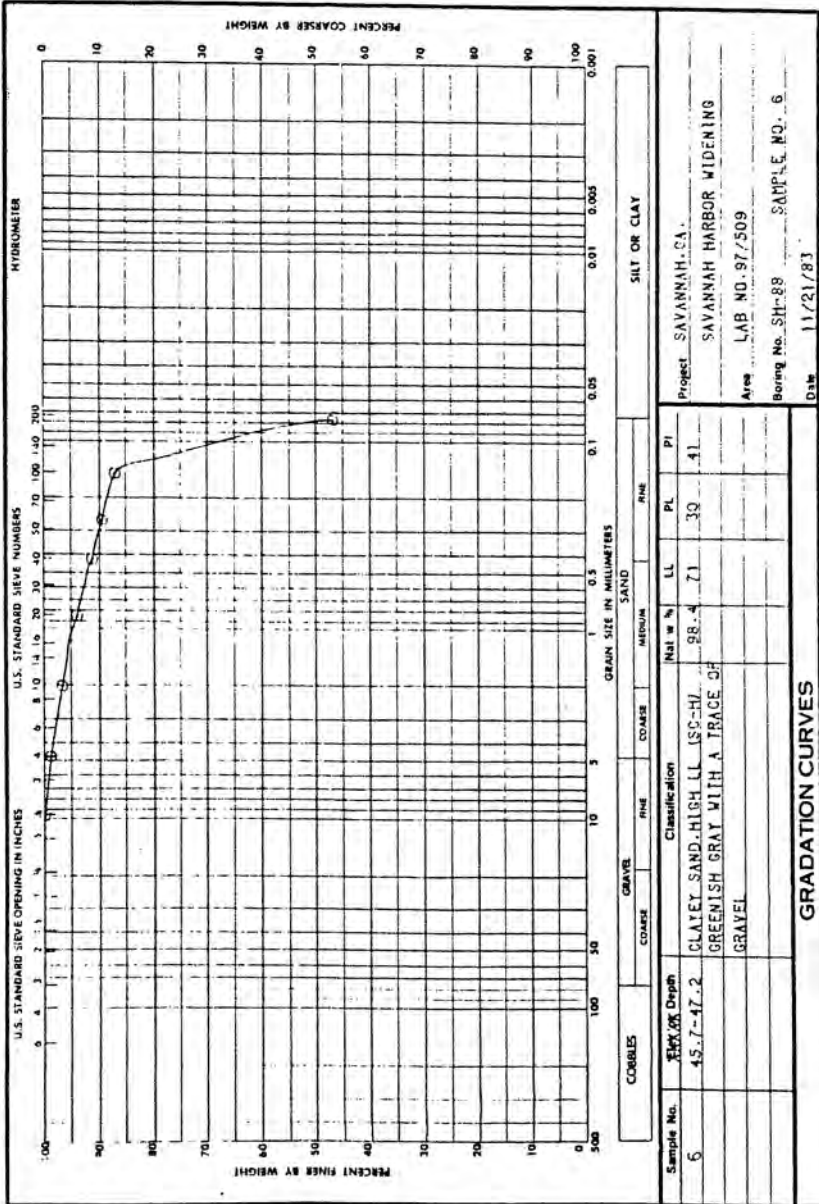
ENG 2087

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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 811 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

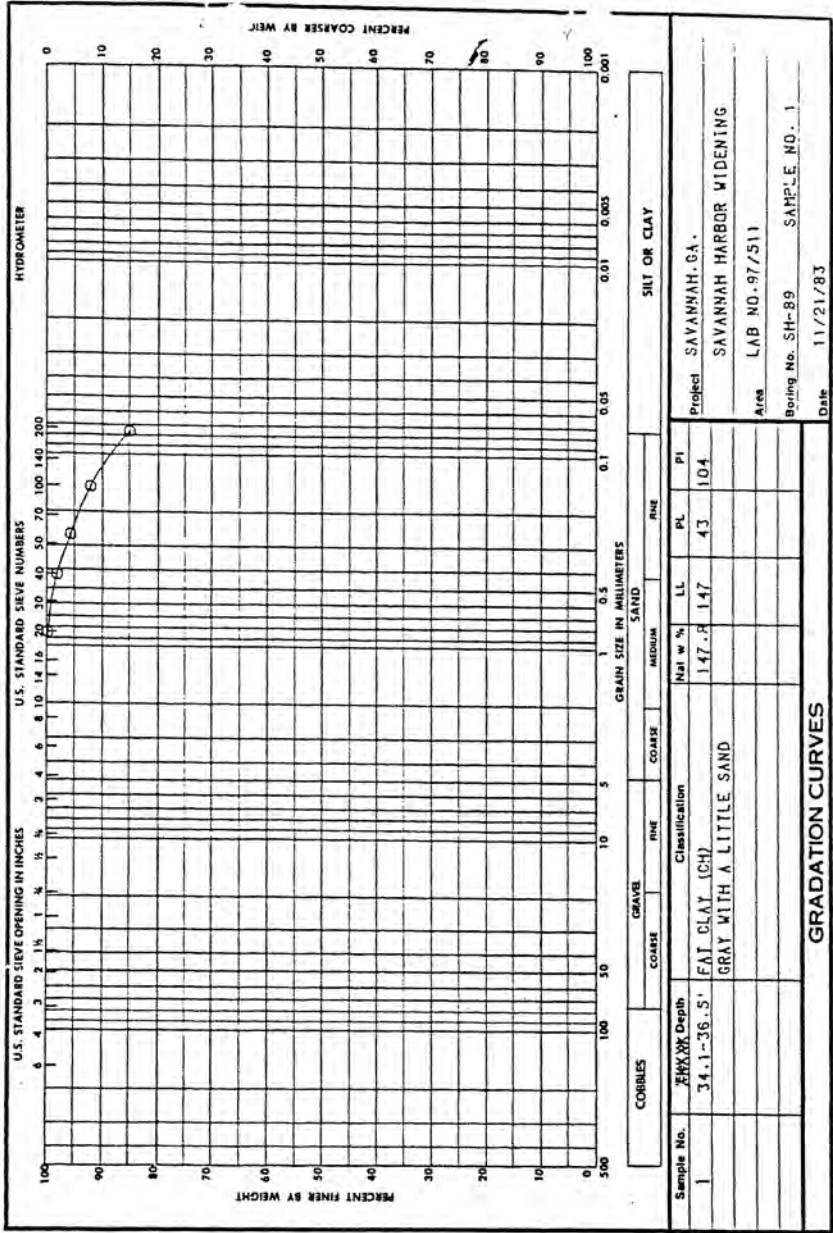
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ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-03



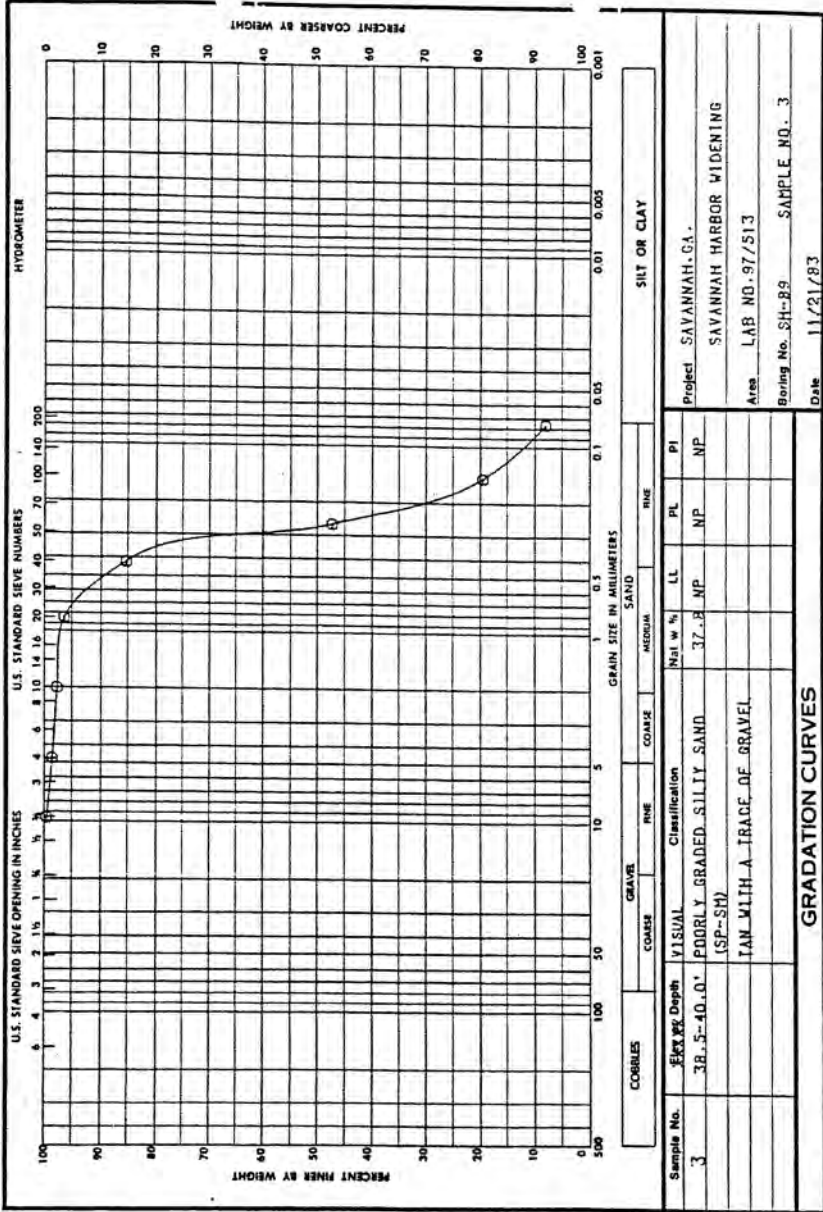
GRADATION CURVES

ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

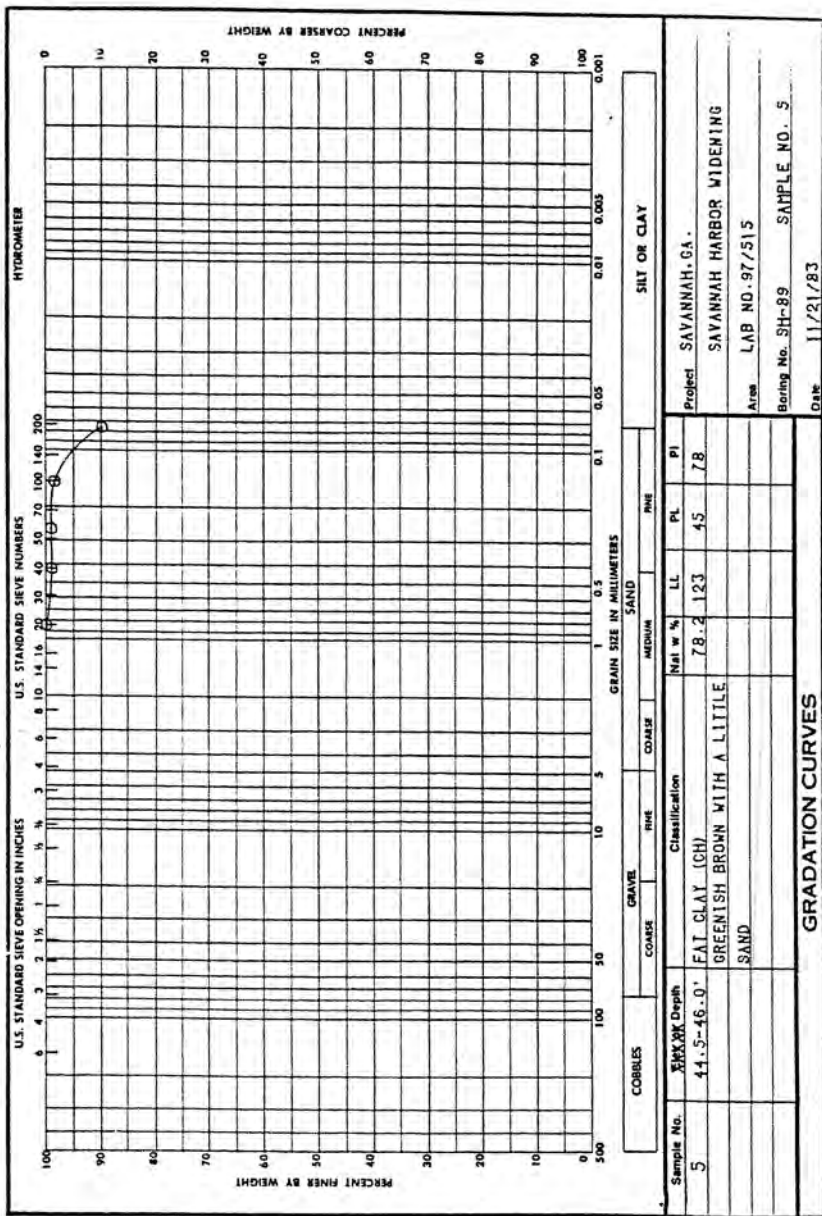


ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778  
Req. No. EN-GS-84-03



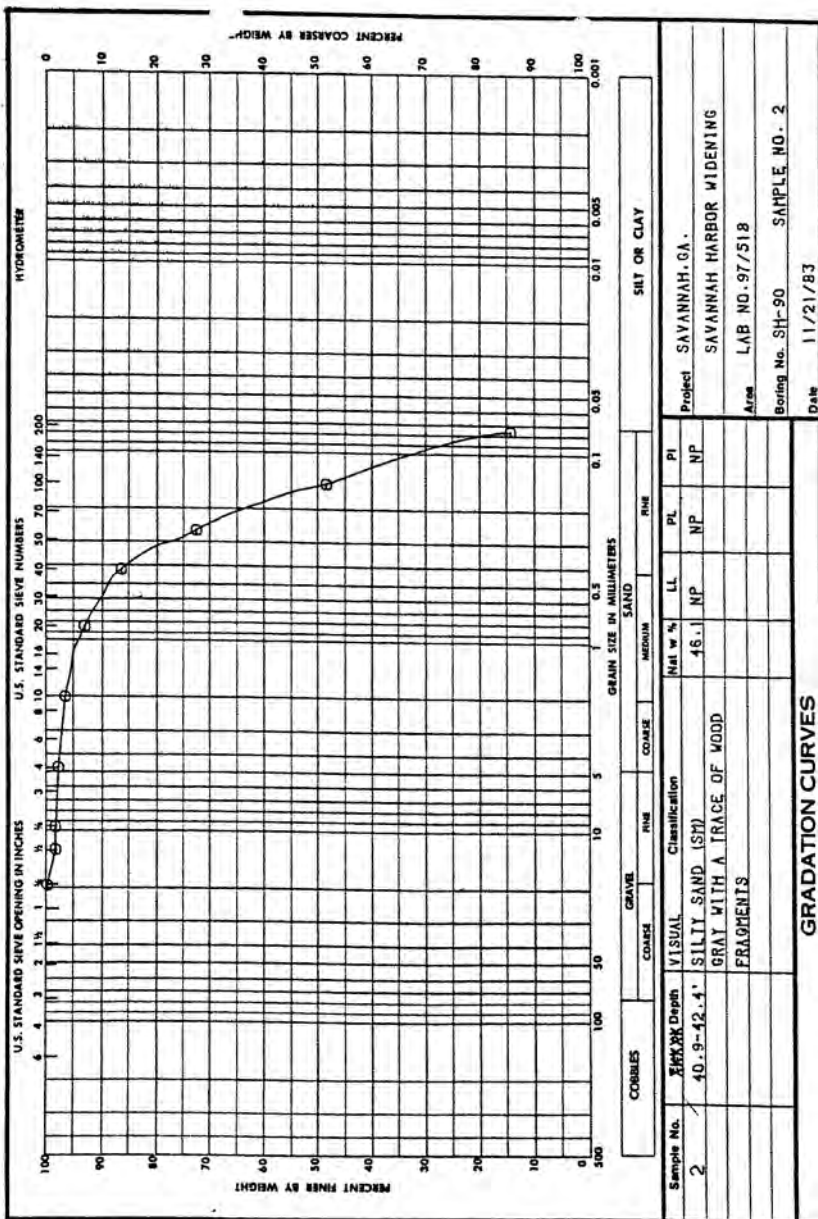
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

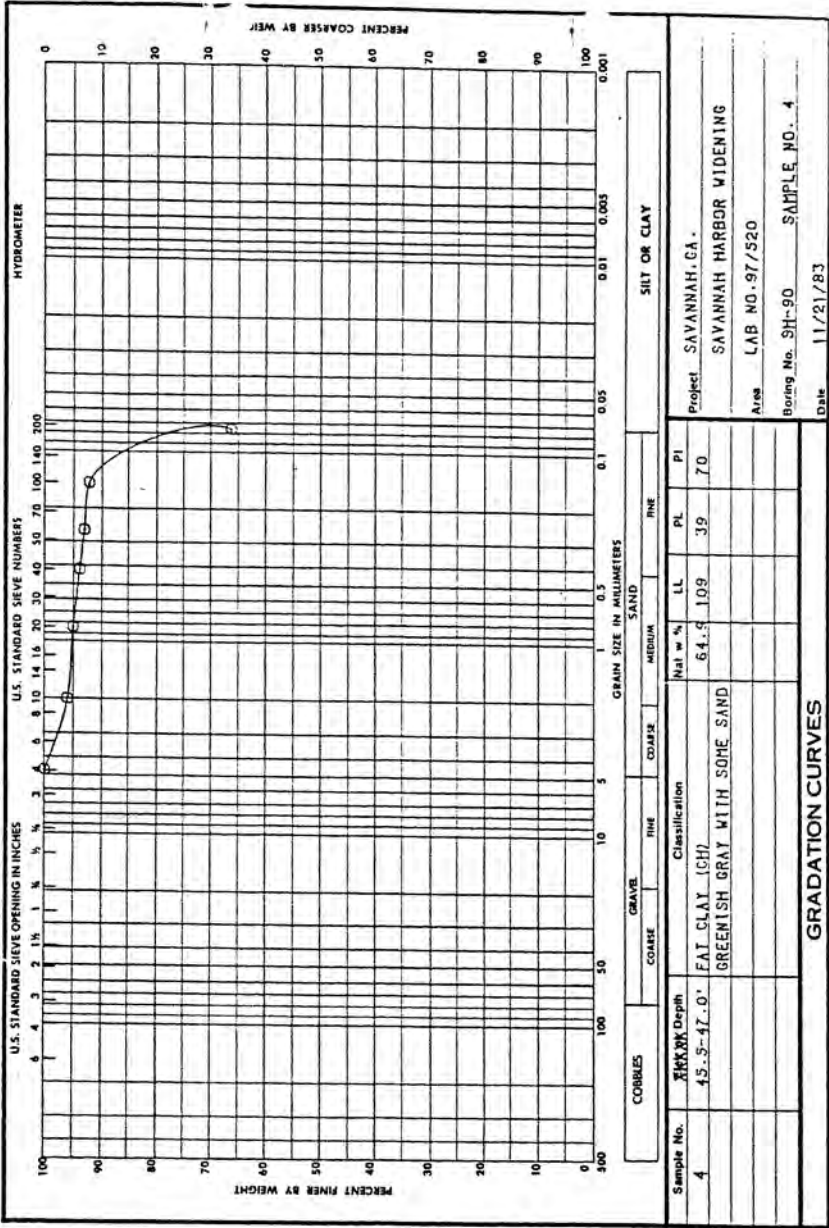
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-GS-84-03

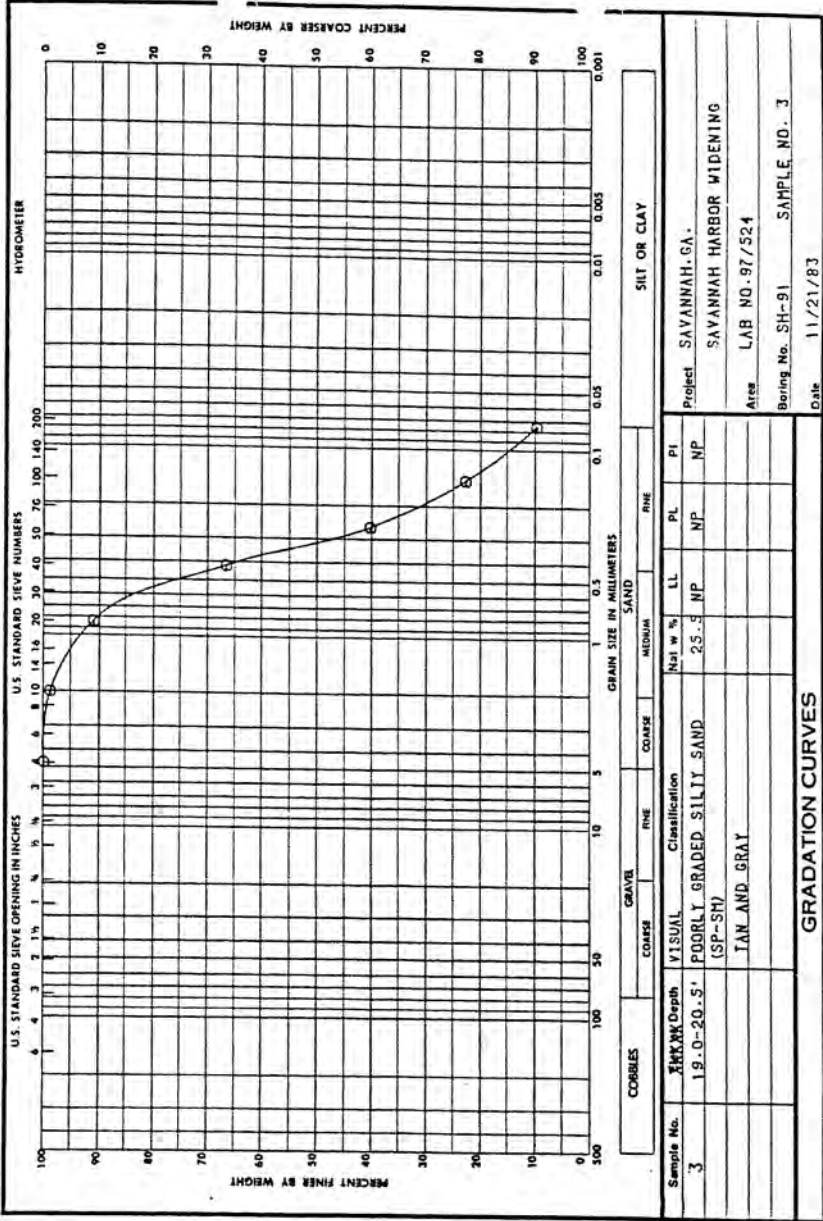


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

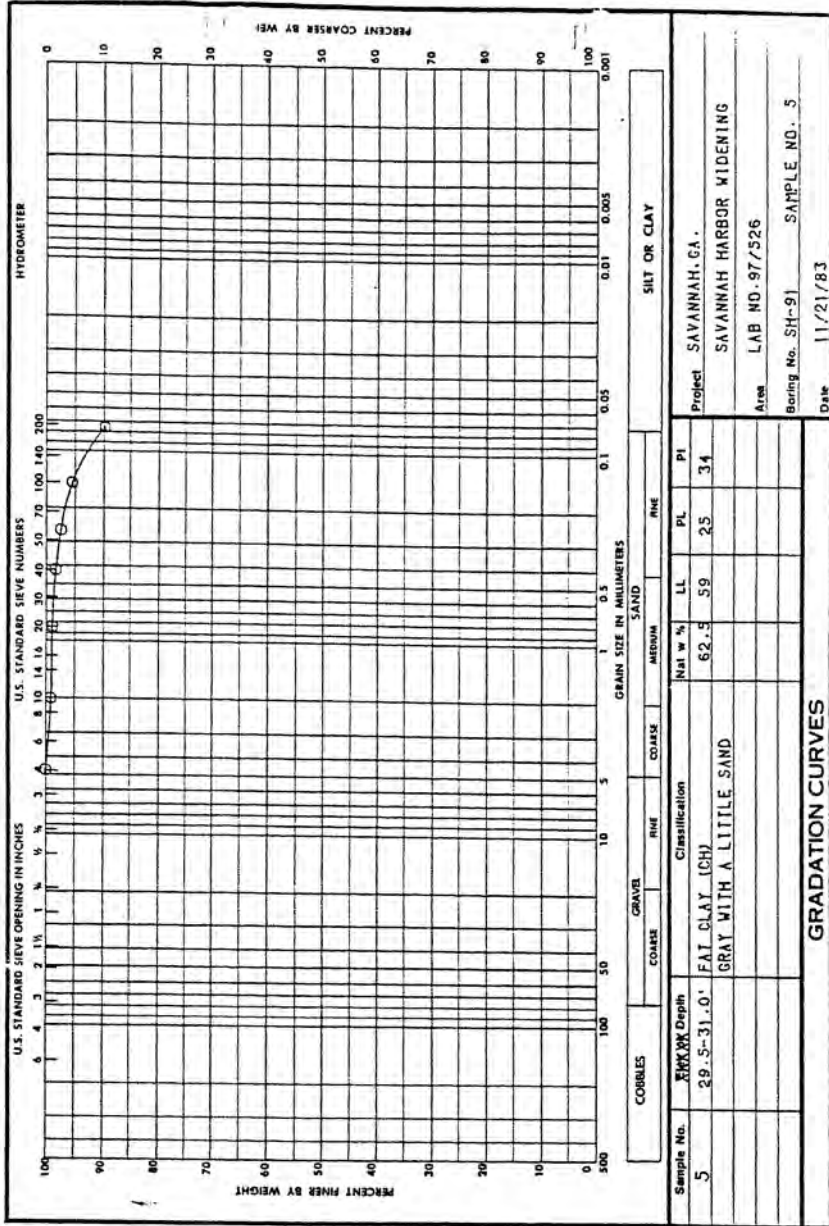
Req. No. EN-6S-84-03



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-CS-84-03

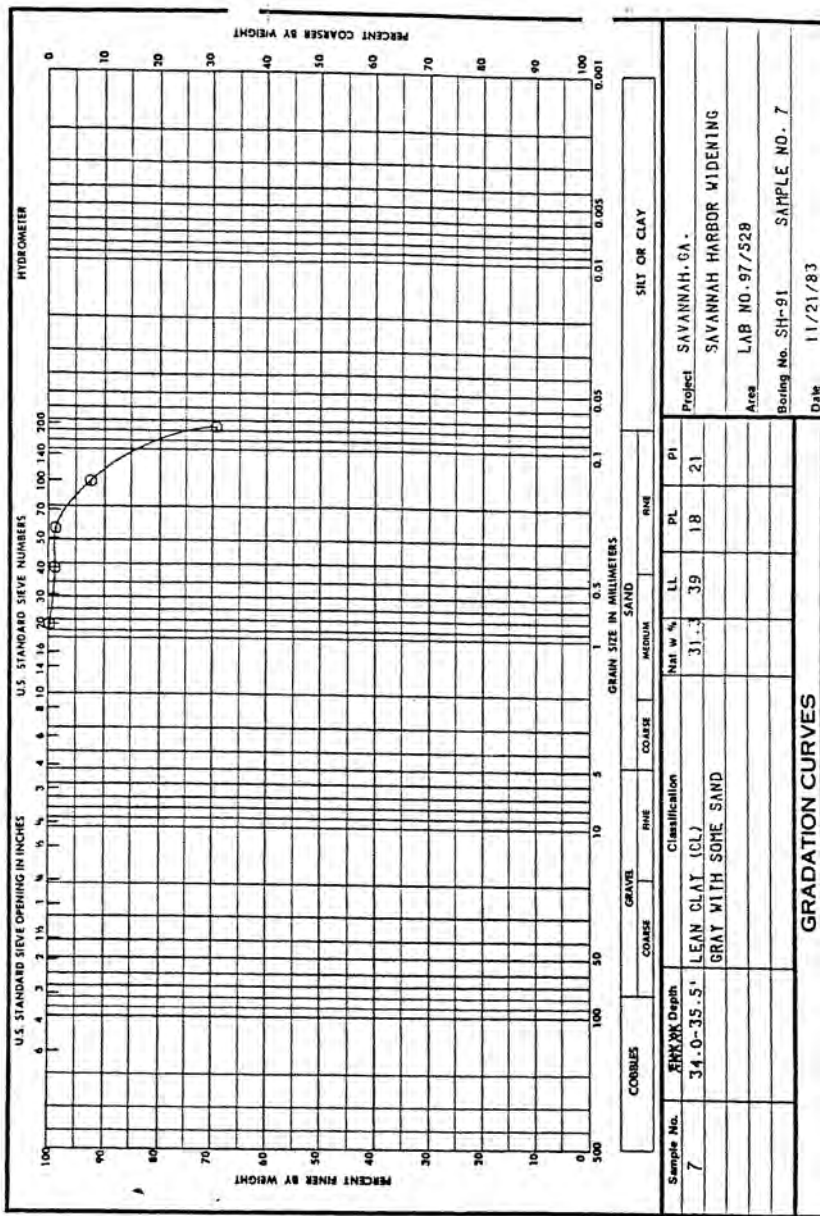


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

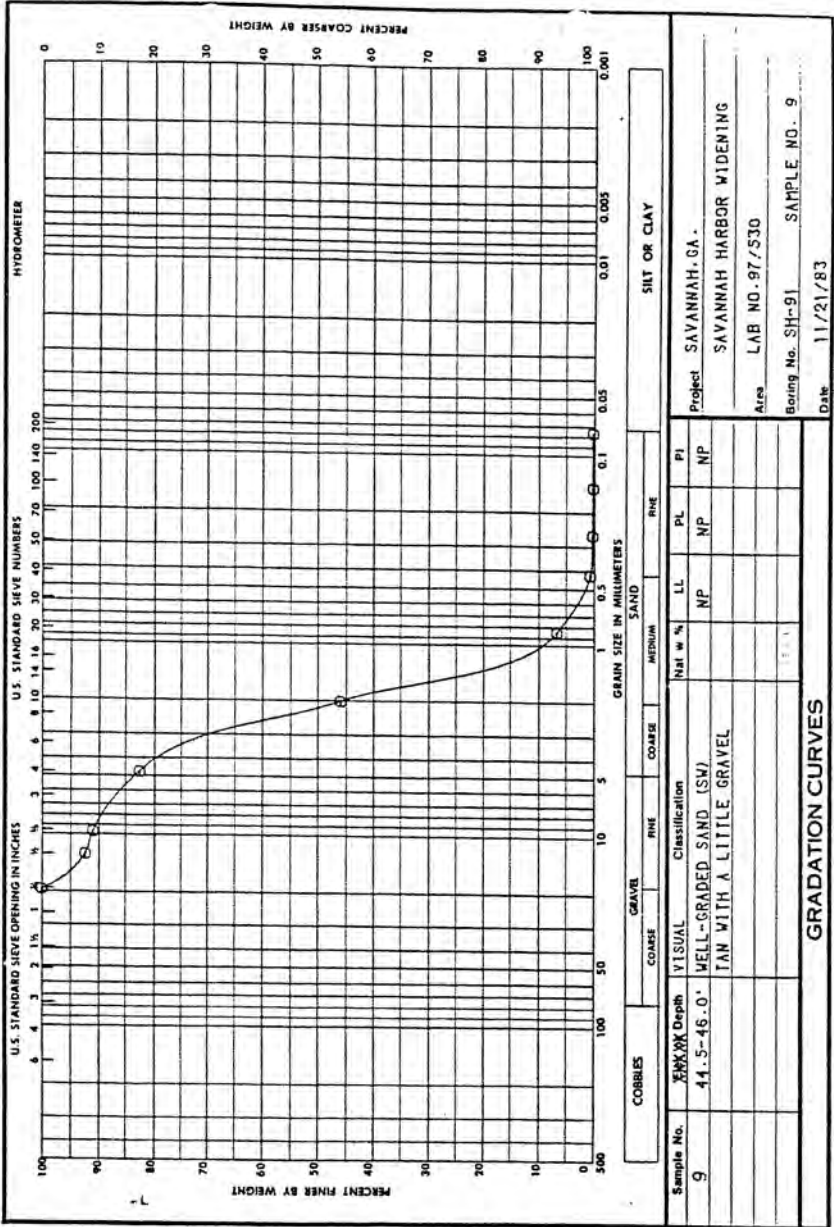


FORM  
1 MAY 83

ENG 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

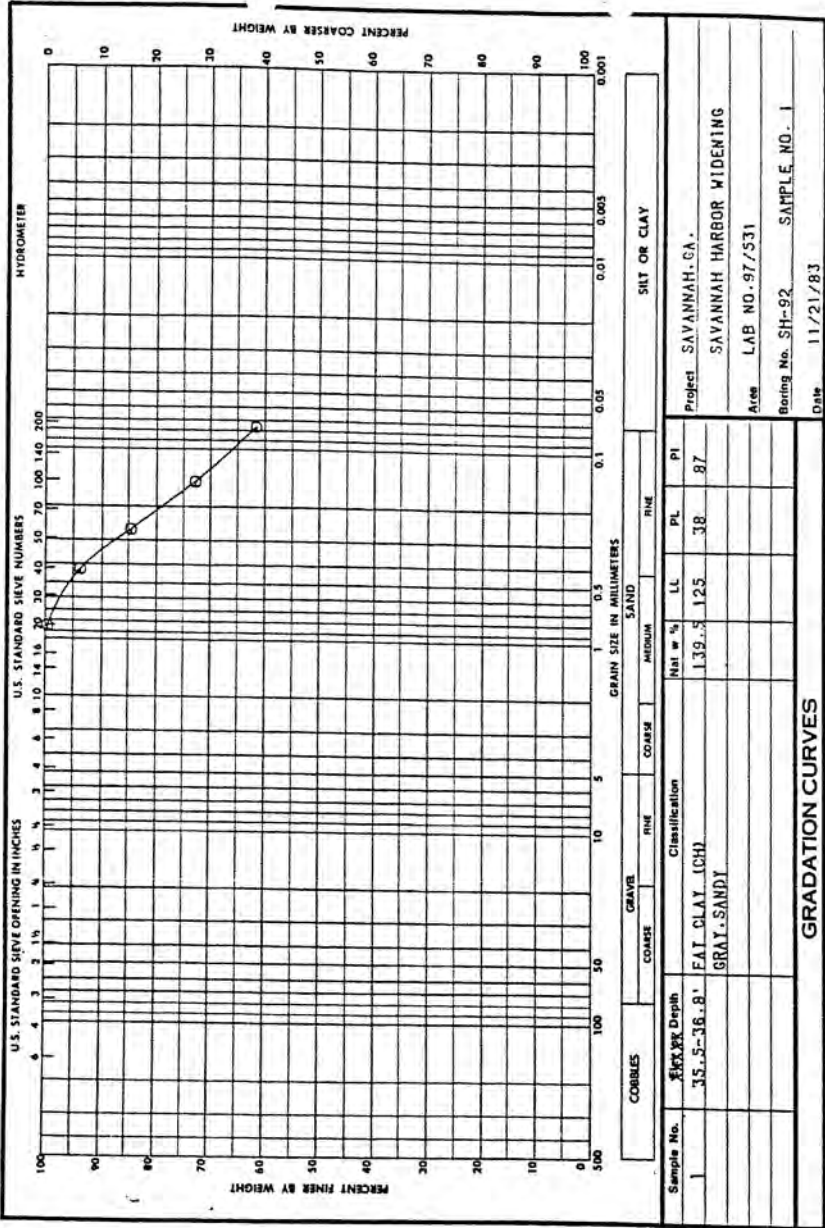
Req. No. EN-GS-84-03



ENG FORM  
1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

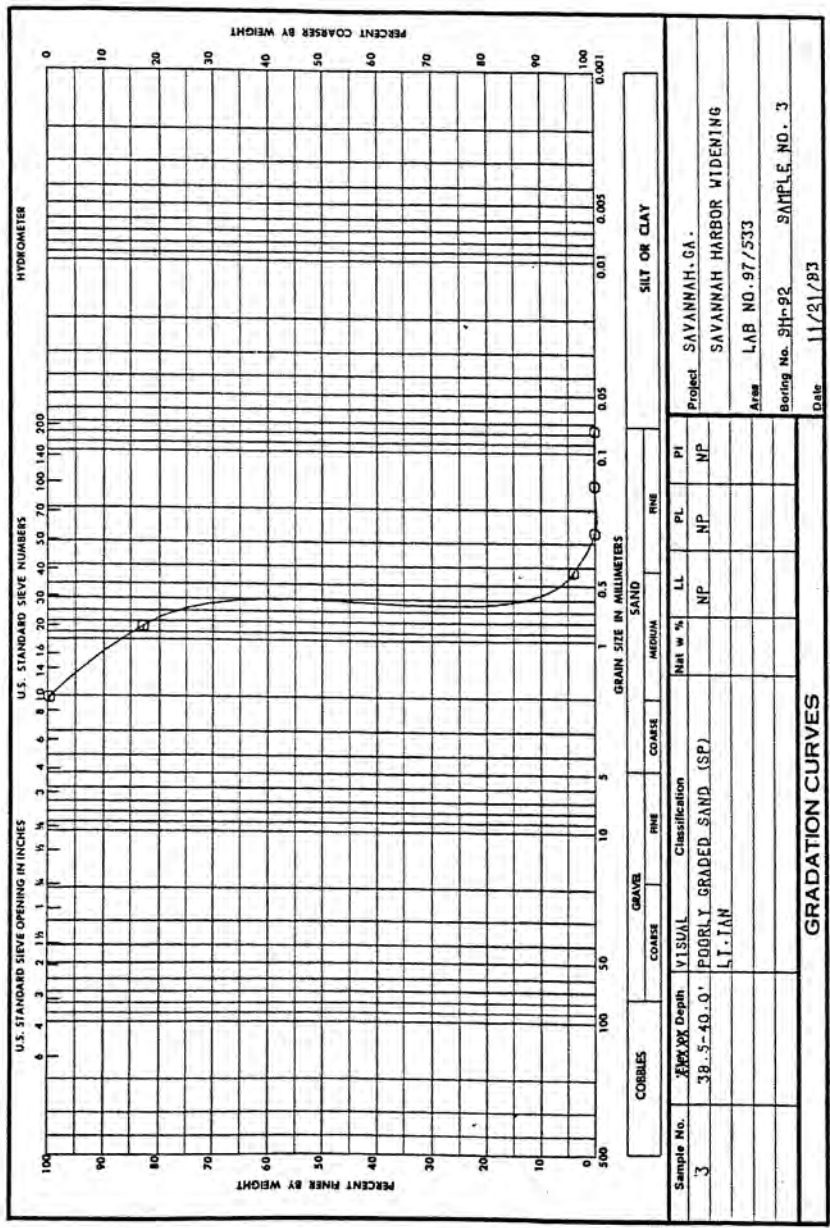
W.O. No. 3778  
Req. No. EN-6S-84-03





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778  
Req. No. EN-GS-84-03



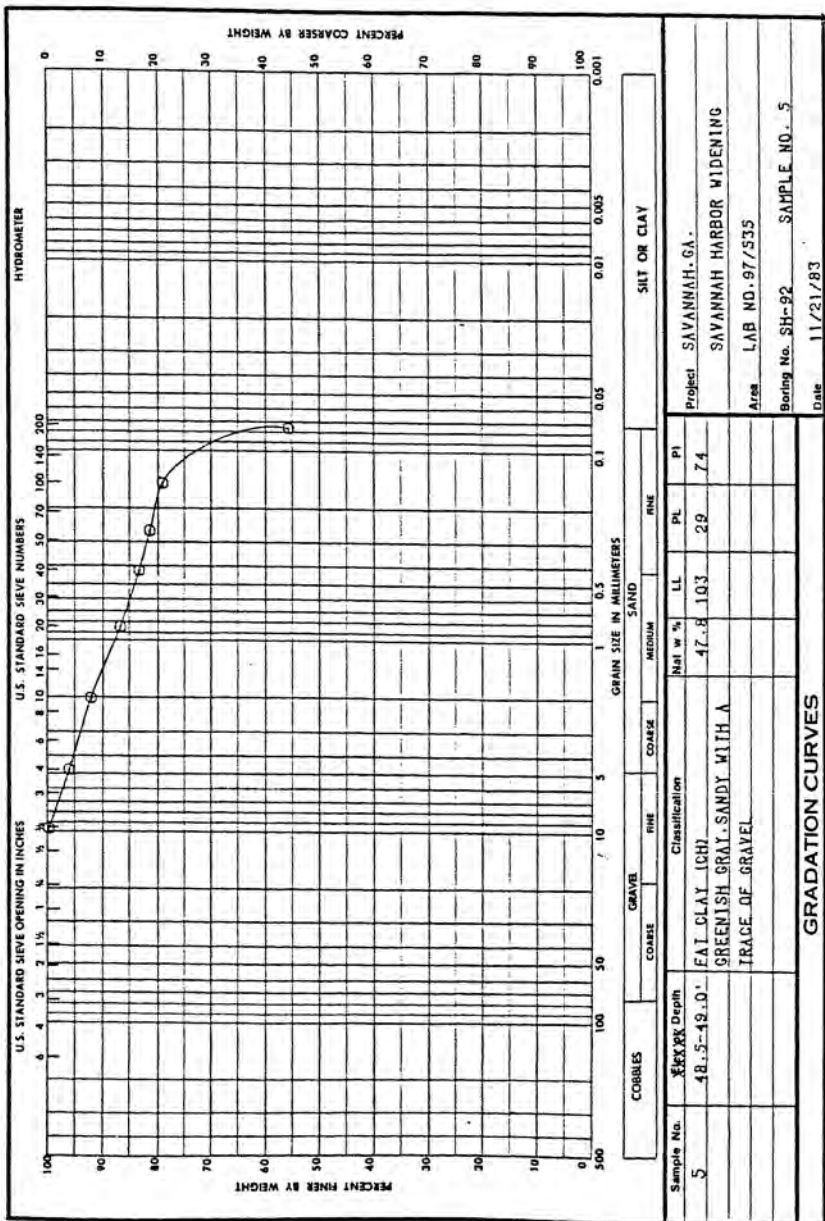
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

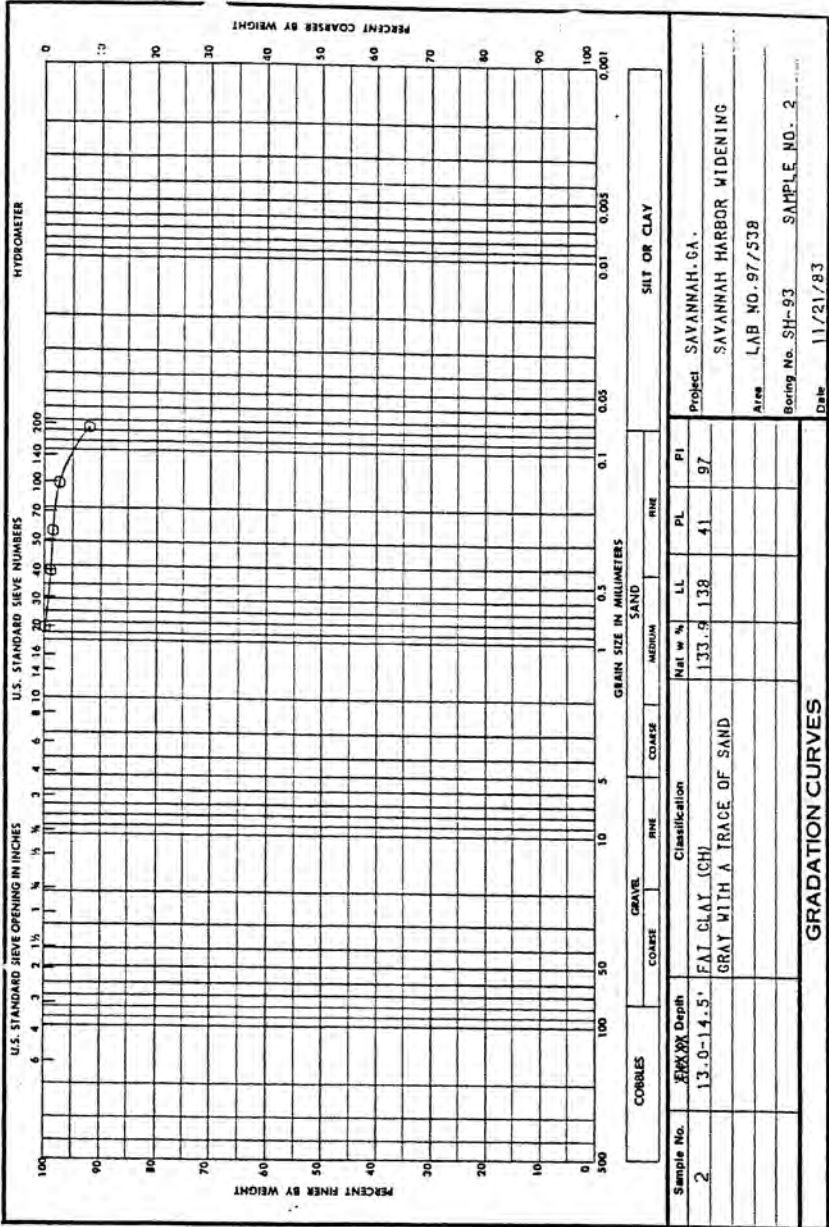
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-65-84-03

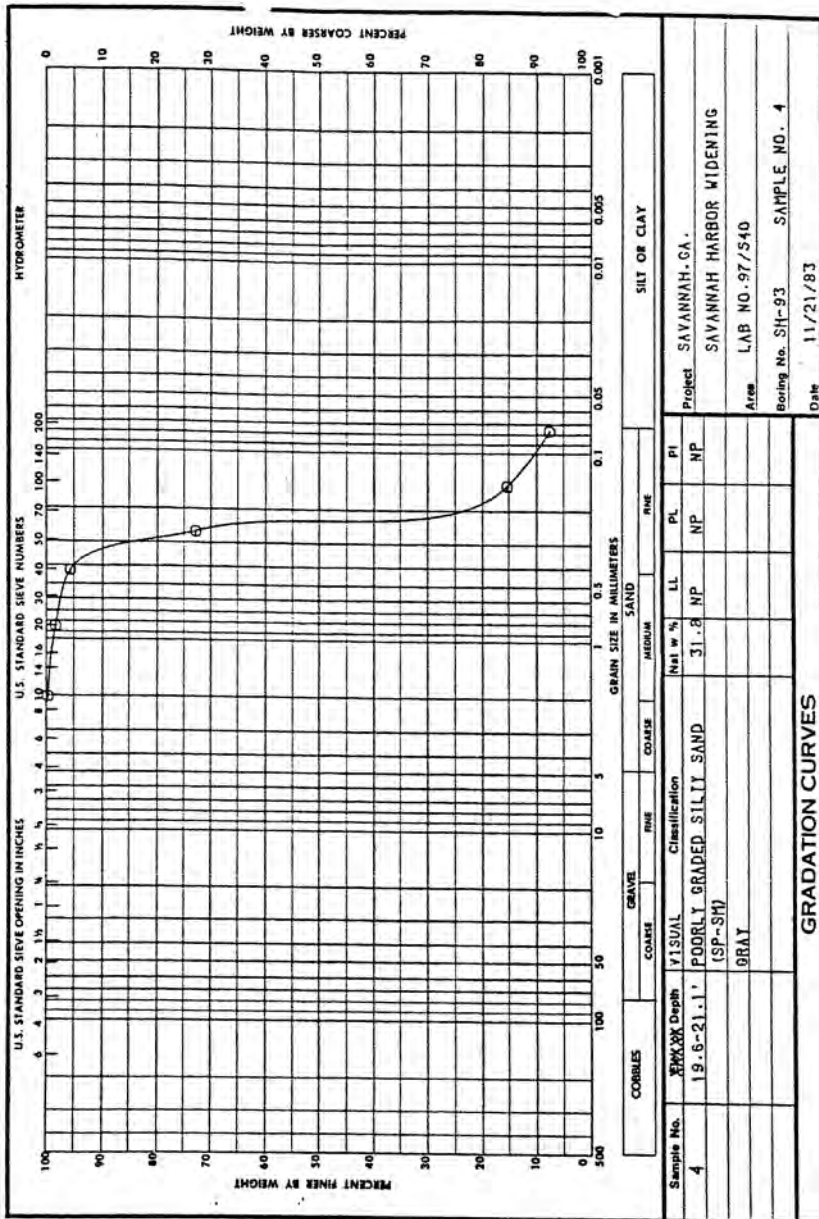


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-6S-84-03

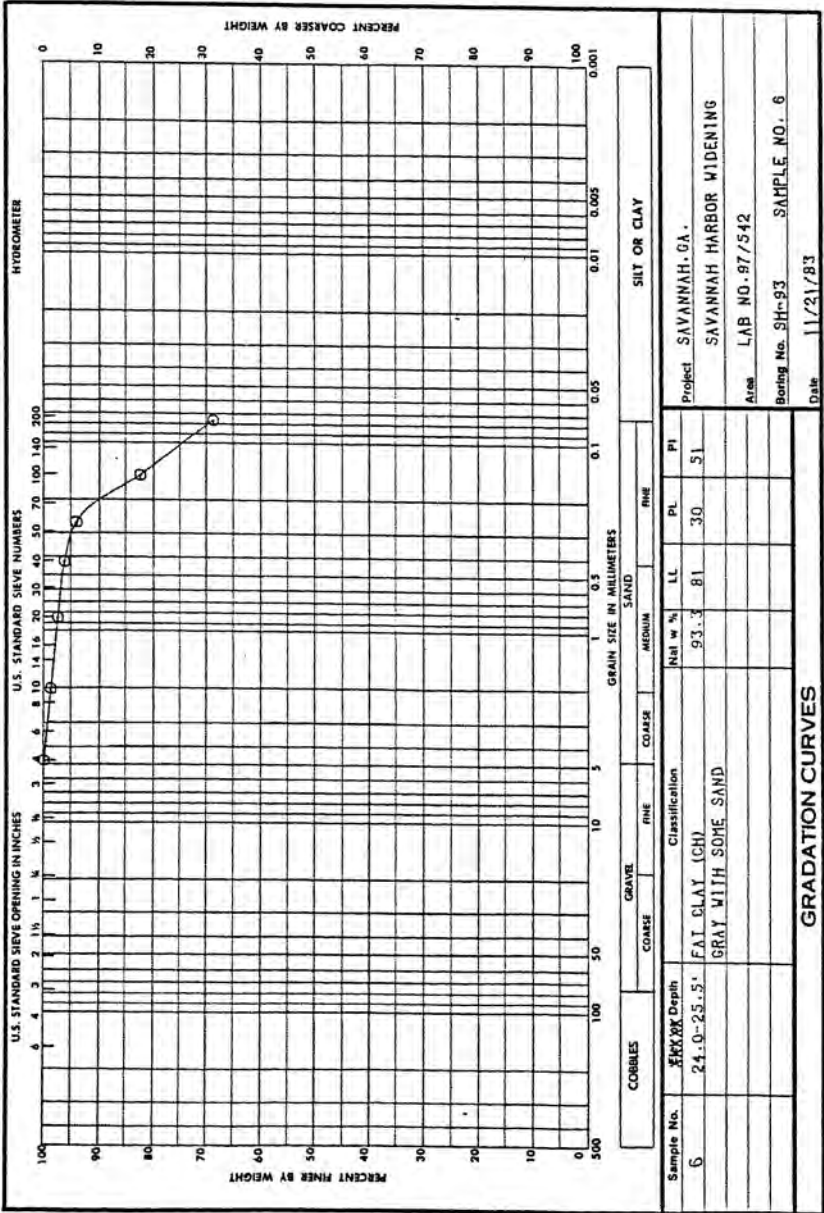


ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

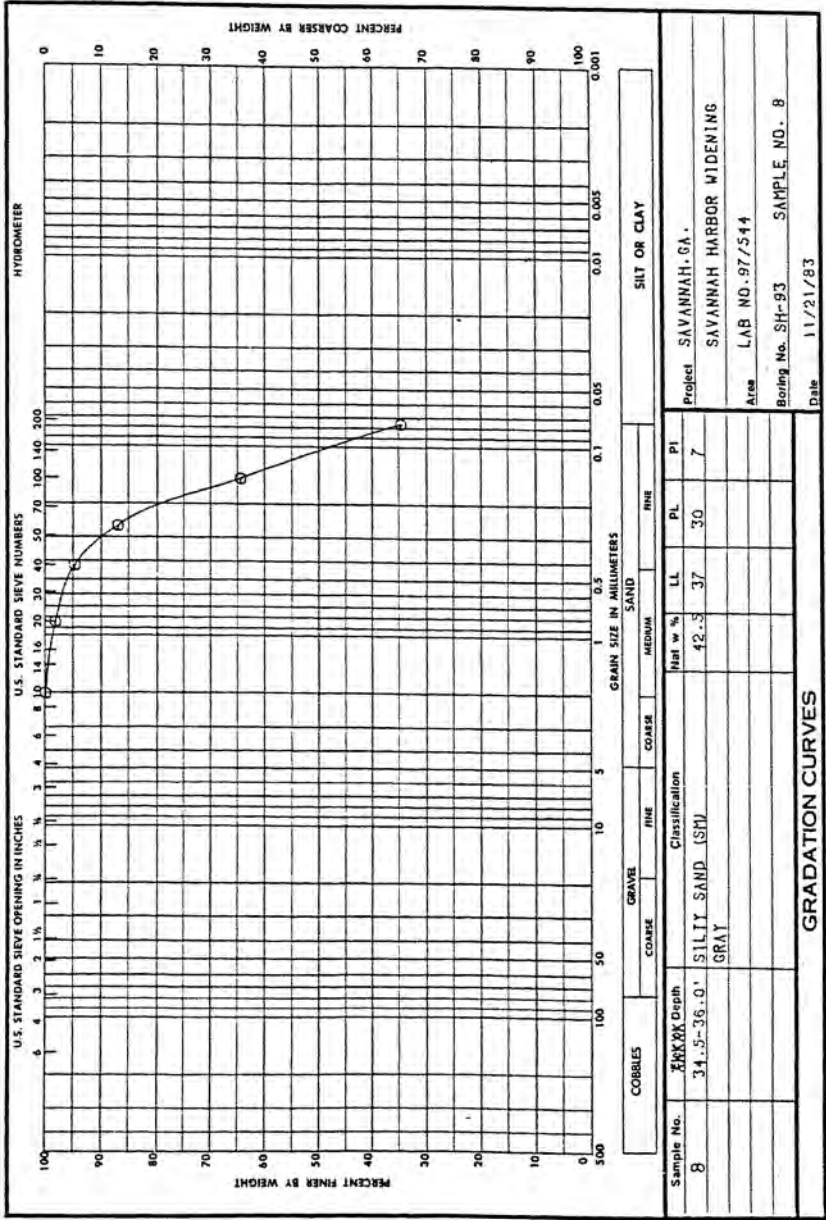


ENG FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

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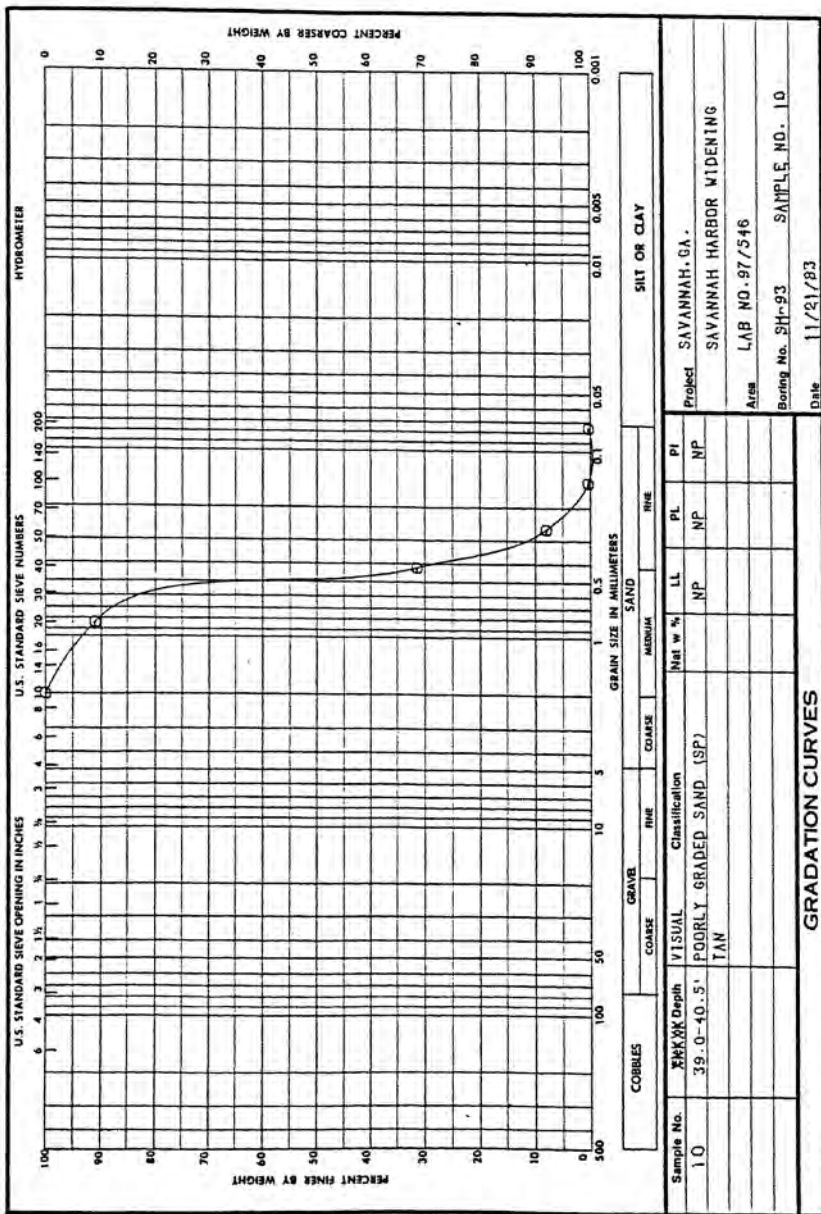


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-6S-84-03

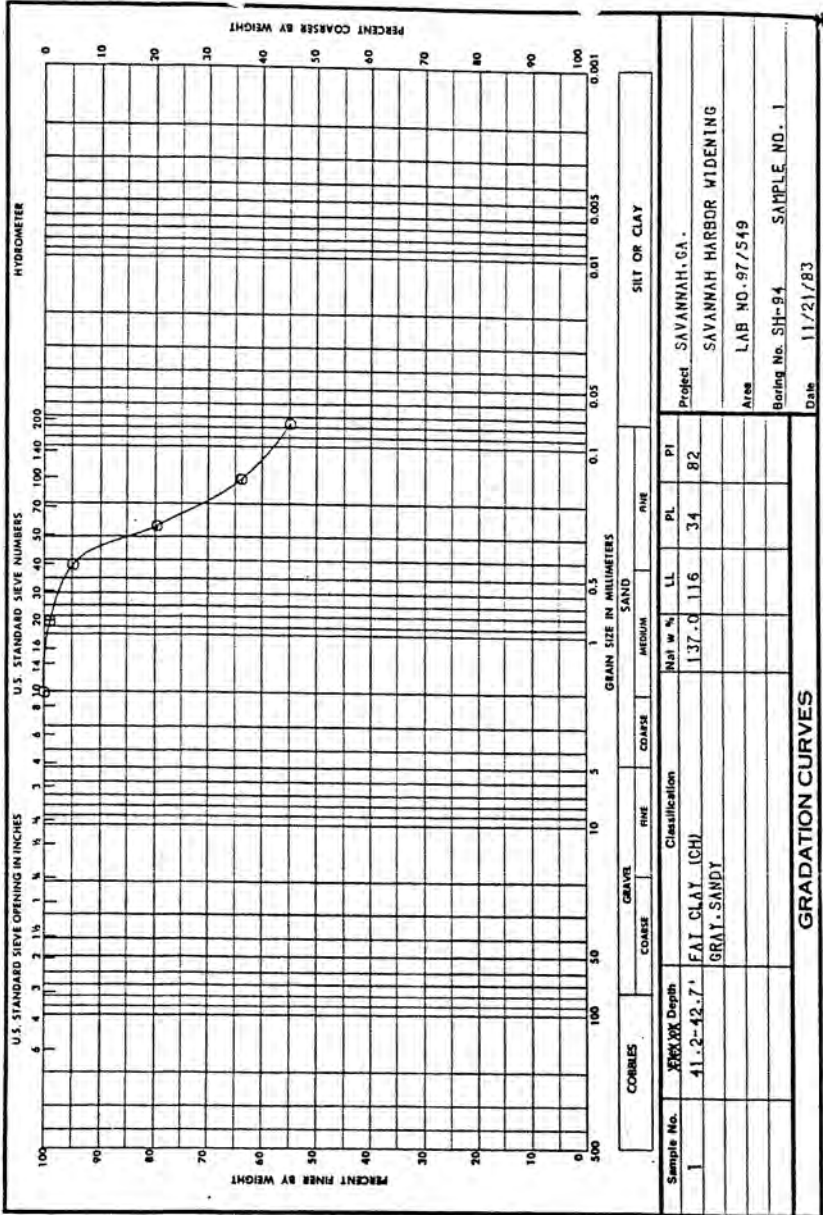


ENG FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

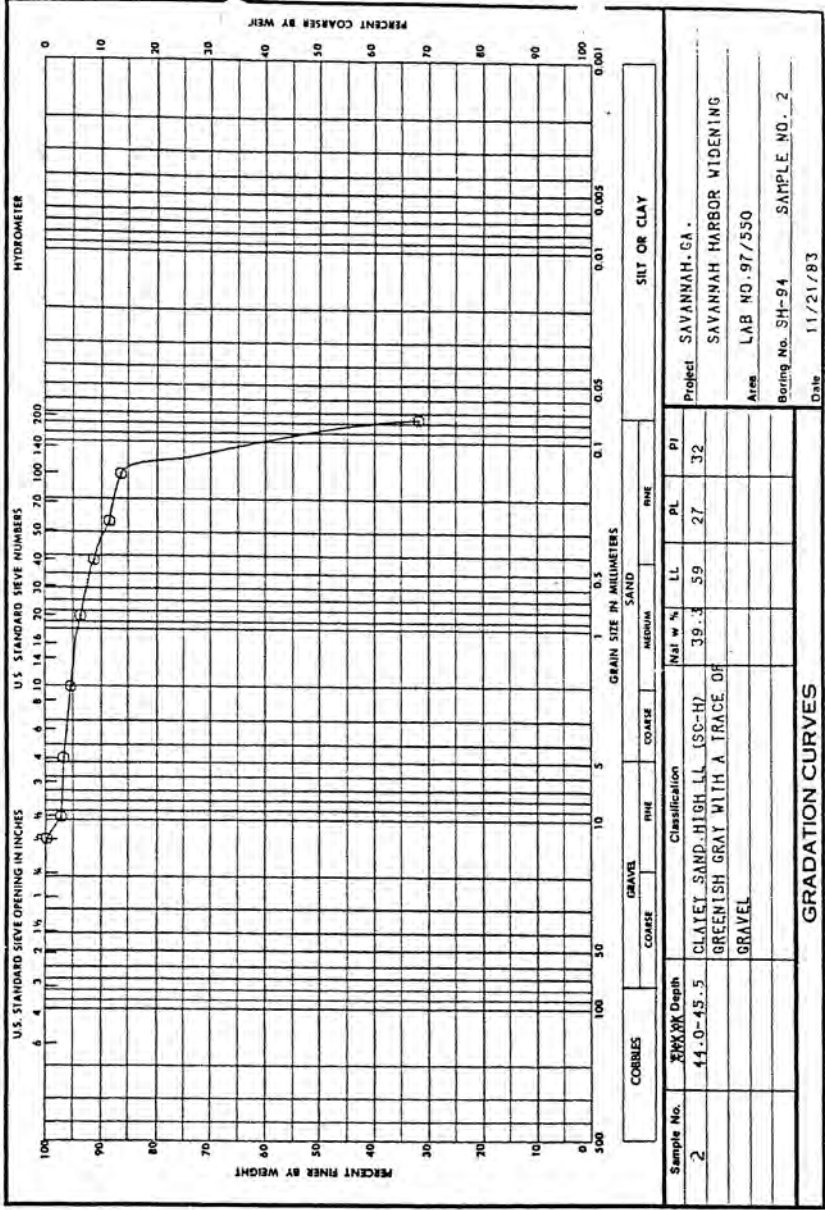


ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778  
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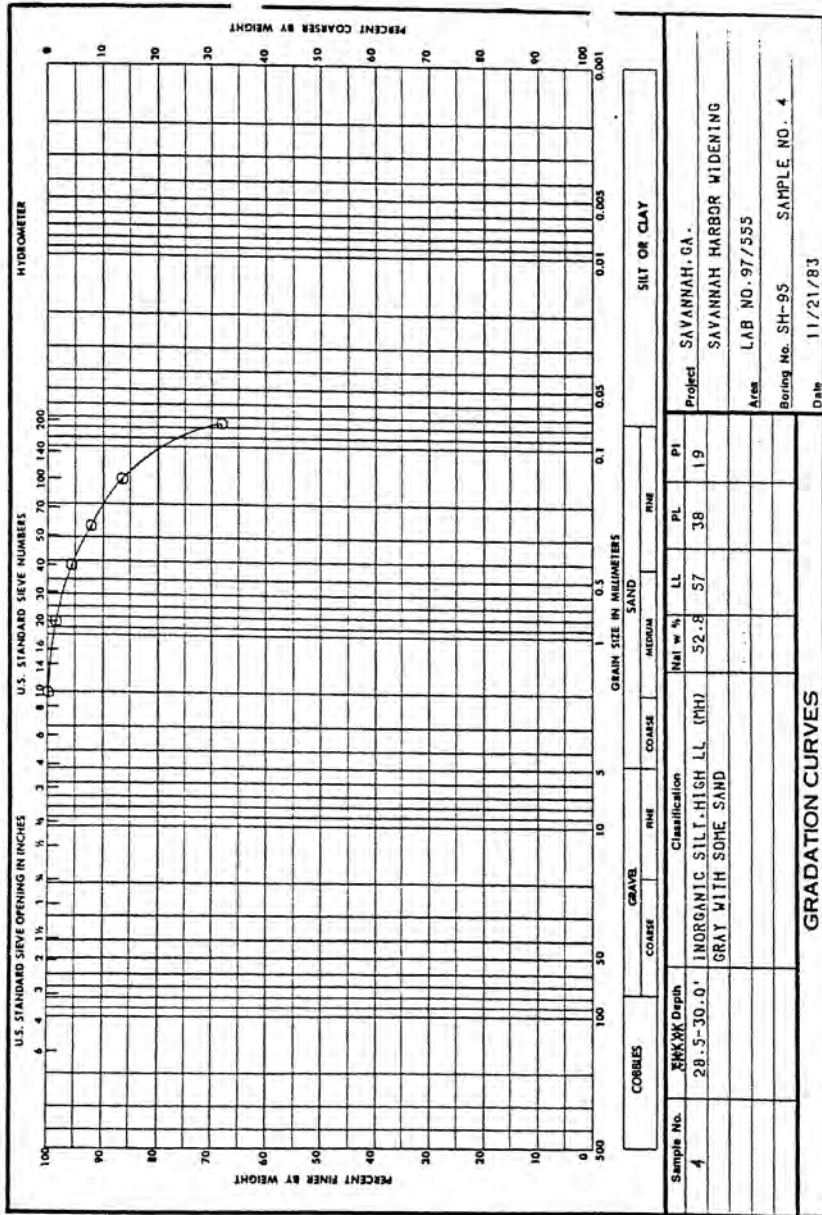




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

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Req. No. EN-GS-84-03



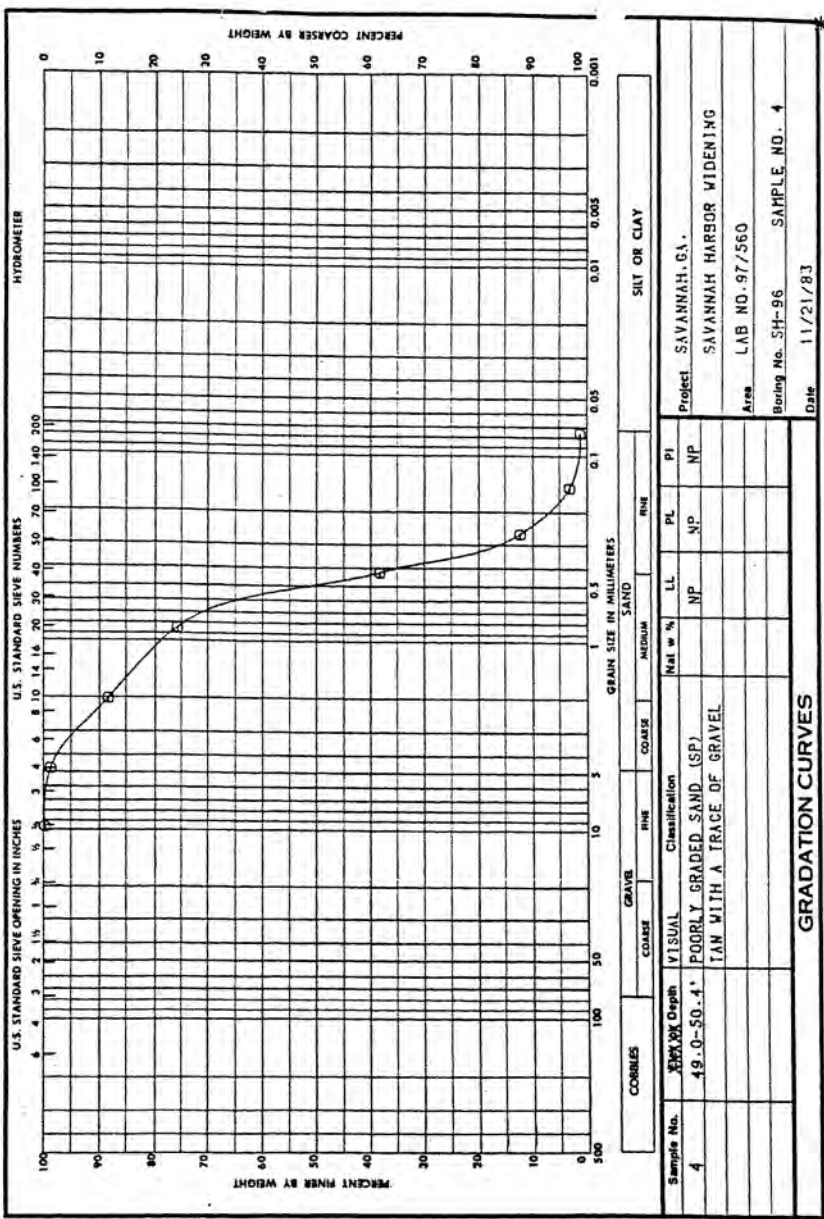
ENG FORM 2087  
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W.O. No. 3778  
Req. No. EN-6S-84-03

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



## GENERAL TEST REPORT (Continued)

(SOILS)

PROJECT Savannah Harbor WideningLAB NO. 97/449---598WORK ORDER NO. 3778DATE 22 Nov 1983REQ. NO. EN-GS-84-03

| Lab No. | Hole No. | Sample No. | Depth (ft) | Moisture Content (%) |
|---------|----------|------------|------------|----------------------|
| 977     |          |            |            |                      |
| 562     | SH-97    | 2          | 42.2-43.7  | 26.8*                |
| 563     | SH-97    | 3          | 44.0-45.5  | 44.7*                |
| 564     | SH-97    | 4          | 48.5-50.0  | 29.6*                |
| 566     | SH-98    | 2          | 18.8-20.3  | 22.7*                |
| 568     | SH-98    | 4          | 29.5-31.0  | 19.2*                |
| 574     | SH-99    | 2          | 42.0-43.5  | 30.5                 |
| 575     | SH-99    | 3          | 45.0-46.5  | 44.6*                |
| 576     | SH-99    | 4          | 49.5-51.0  | 90.6                 |
| 580     | SH-100   | 4          | 20.5-22.0  | 53.8*                |
| 582     | SH-100   | 6          | 28.0-29.5  | 92.6                 |
| 583     | SH-100   | 7          | 34.0-35.5  | 120.5*               |
| 584     | SH-100   | 8          | 39.5-41.0  | 97.4                 |
| 585     | SH-100   | 9          | 42.5-44.0  | 76.1                 |
| 589     | SH-101   | 1          | 15.4-16.9  | 72.1                 |
| 591     | SH-101   | 3          | 18.5-20.0  | 112.9*               |
| 593     | SH-101   | 5          | 24.5-26.0  | 48.5*                |
| 594     | SH-101   | 6          | 26.0-27.5  | 112.8                |
| 595     | SH-101   | 7          | 30.9-32.4  | 15.9*                |

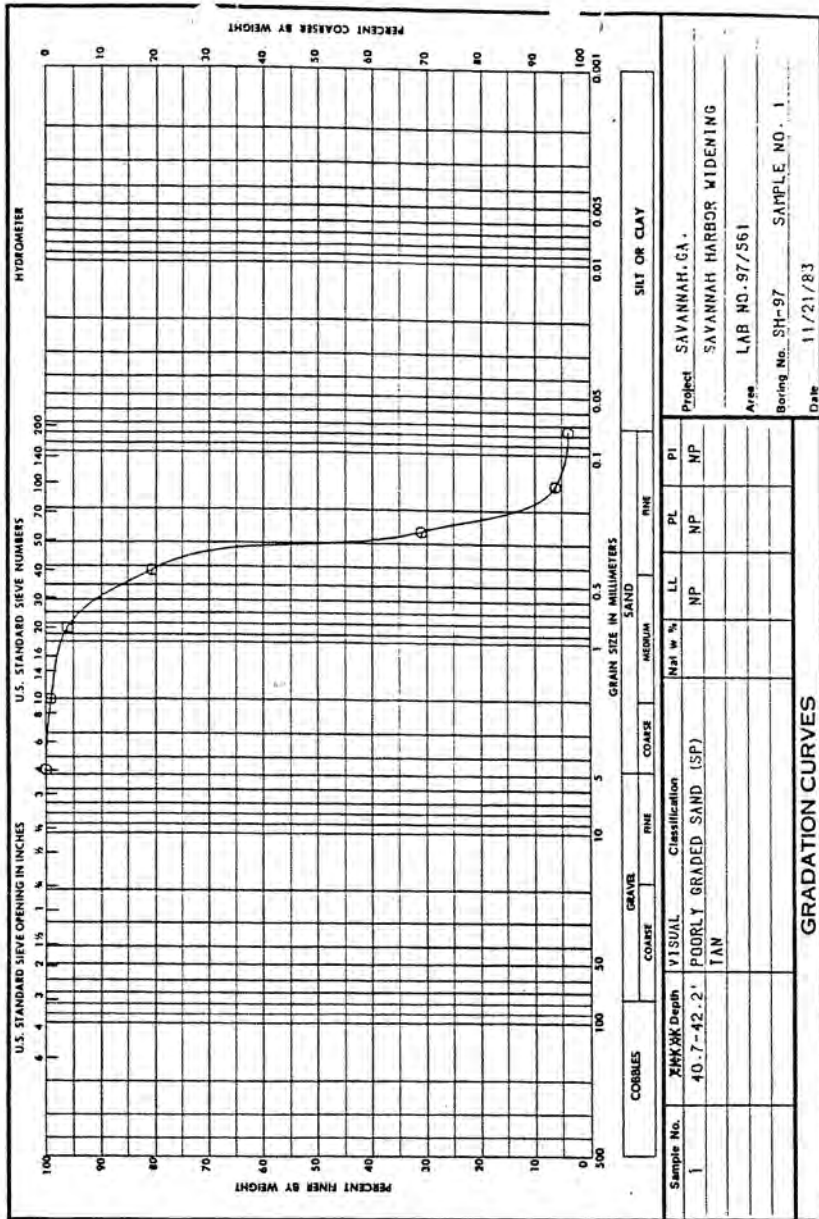
\*See lab classification data on ENG Form 2087.

|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                      |                   |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|-------------------|-----------------------------|
| <b>GENERAL TEST REPORT</b><br><b>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC</b><br><b>CORPS OF ENGINEERS</b><br><b>MARIETTA, GEORGIA</b>                                                                                                                                                                                                                                                                          |                 | DISTRICT/OFFICE      |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | Savannah             |                   |                             |
| <b>PROJECT</b><br>Savannah Harbor Widening                                                                                                                                                                                                                                                                                                                                                                                    |                 | CONTRACT NO.         |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | ---                  |                   |                             |
| <b>TYPE SAMPLE</b><br>Jar Samples of Disturbed Soils                                                                                                                                                                                                                                                                                                                                                                          |                 | DATE REPORTED        |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | 10 April 1984        |                   |                             |
| <b>SOURCE</b><br>Hole No. SH-99A                                                                                                                                                                                                                                                                                                                                                                                              |                 | WORK ORDER NO.       |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | 3778                 |                   |                             |
| <b>FOR USE AS</b><br>Investigation                                                                                                                                                                                                                                                                                                                                                                                            |                 | REQN. NO.            |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | EN-GS-84-03 (CH. 1)  |                   |                             |
| <b>TESTED FOR</b><br>Lab Classification and Field Moisture                                                                                                                                                                                                                                                                                                                                                                    |                 | BASE UNIT COST       |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | ---                  |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | DATE SAMPLE RECEIVED |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | 1 Sept - 30 Dec 1983 |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | LAB NO.              |                   |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | 97/611               |                   |                             |
| <div style="display: flex; justify-content: space-between; align-items: center;"> <div>  <input type="checkbox"/> MEETS SPECIFICATIONS         </div> <div>N/A</div> <div>  <input type="checkbox"/> FAILS SPECIFICATIONS (See below)         </div> </div> |                 |                      |                   |                             |
| <u>Lab No.</u>                                                                                                                                                                                                                                                                                                                                                                                                                | <u>Hole No.</u> | <u>Sample No.</u>    | <u>Depth (ft)</u> | <u>Moisture Content (%)</u> |
| 97/611                                                                                                                                                                                                                                                                                                                                                                                                                        | SH-99A          | 1                    | 39.6-41.1         | 87.4                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                      |                   |                             |
| REMARKS:                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                      |                   |                             |
| REPORTED BY <input type="checkbox"/> PHONE <input type="checkbox"/> WIRE                                                                                                                                                                                                                                                                                                                                                      |                 | TESTED BY            |                   | CHECKED BY                  |
| DATE                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | NM, CL, JL           |                   | ES                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | SAMPLED BY District  |                   |                             |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03



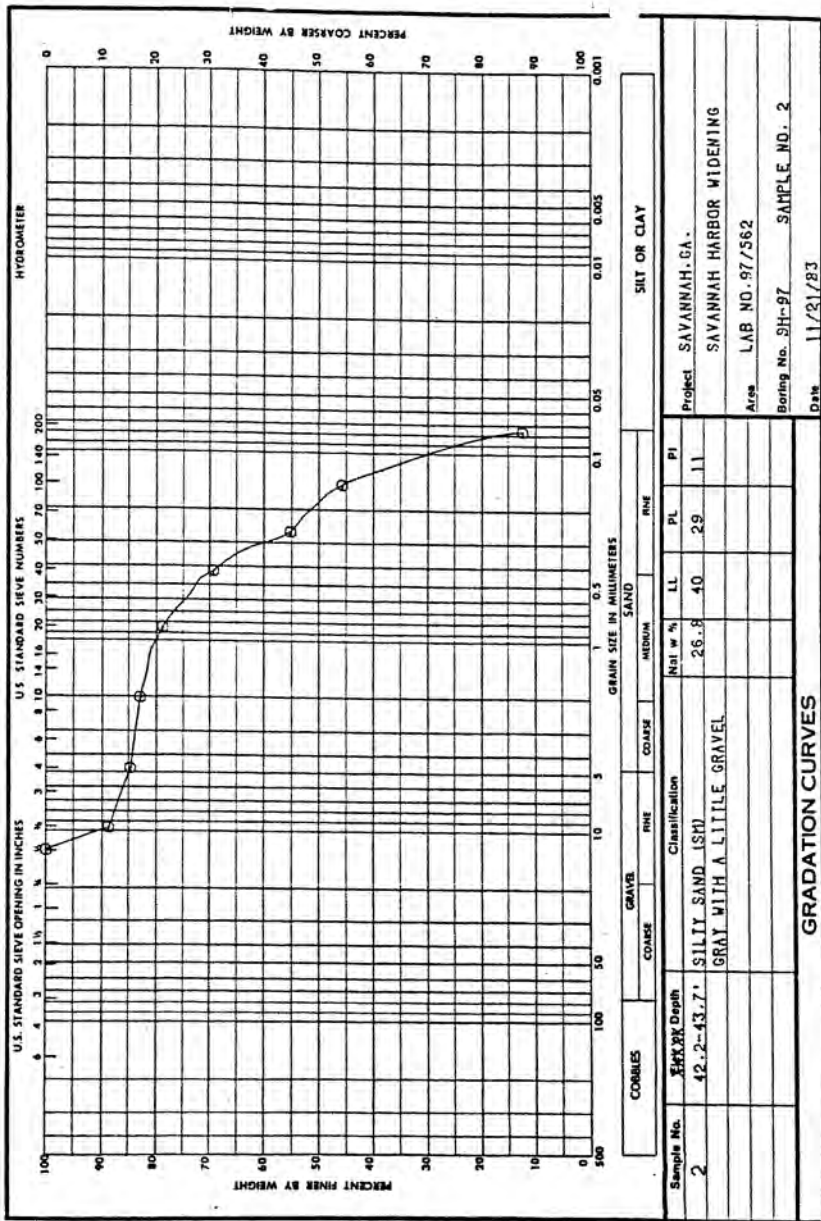
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

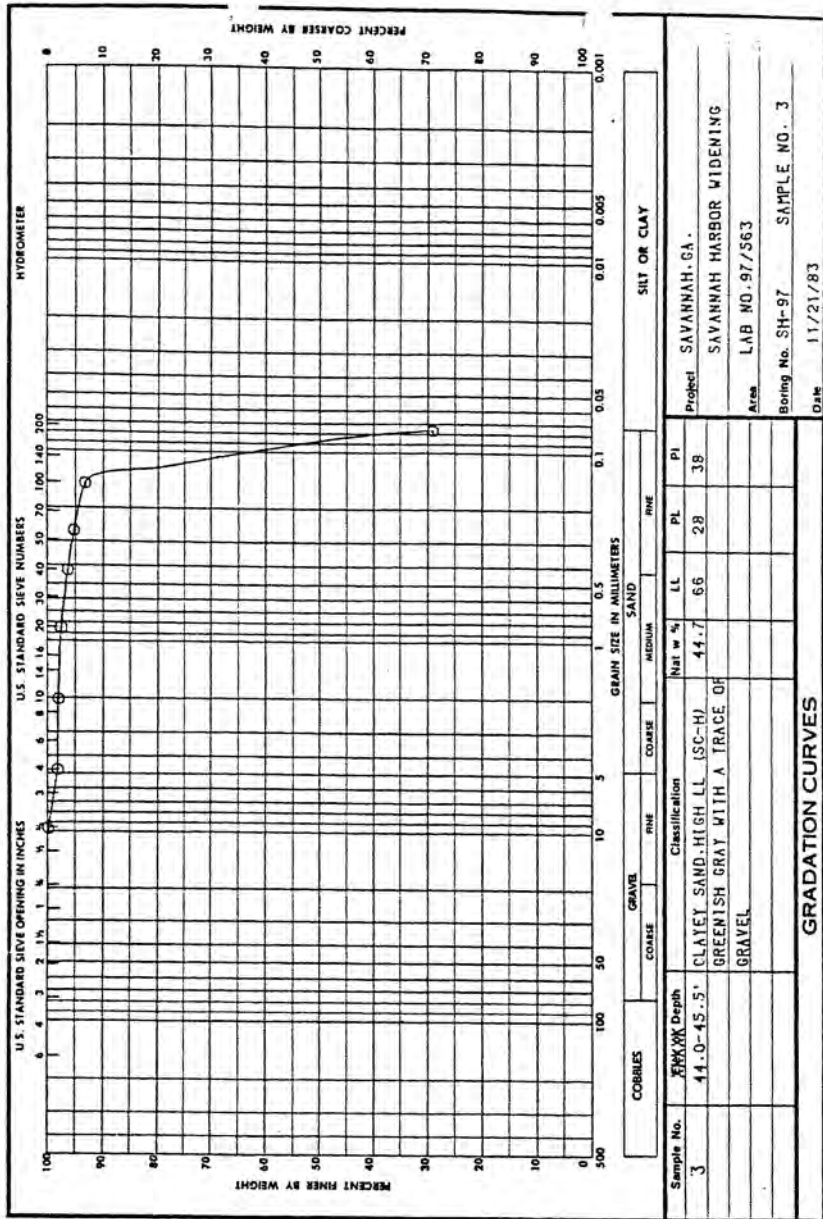


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

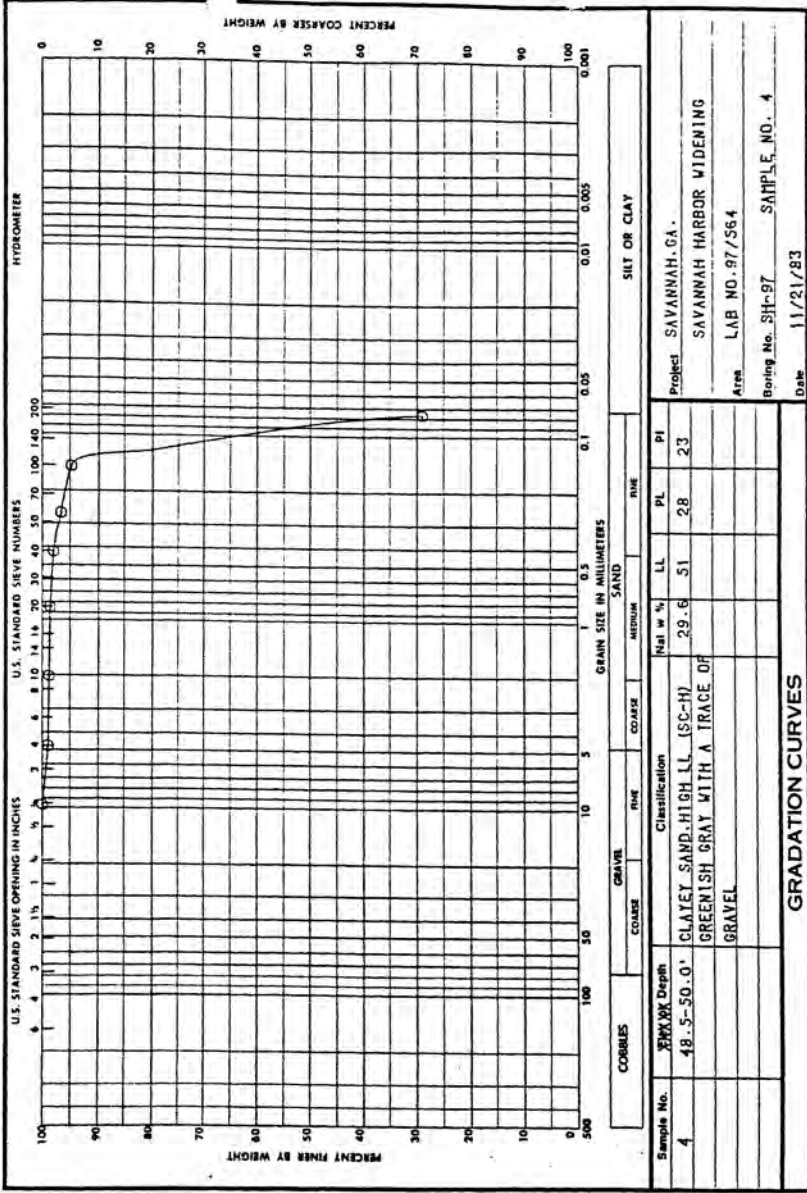


ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

FD-302 (Rev. 3-7-60)

Req. No. EN-GS-84-03

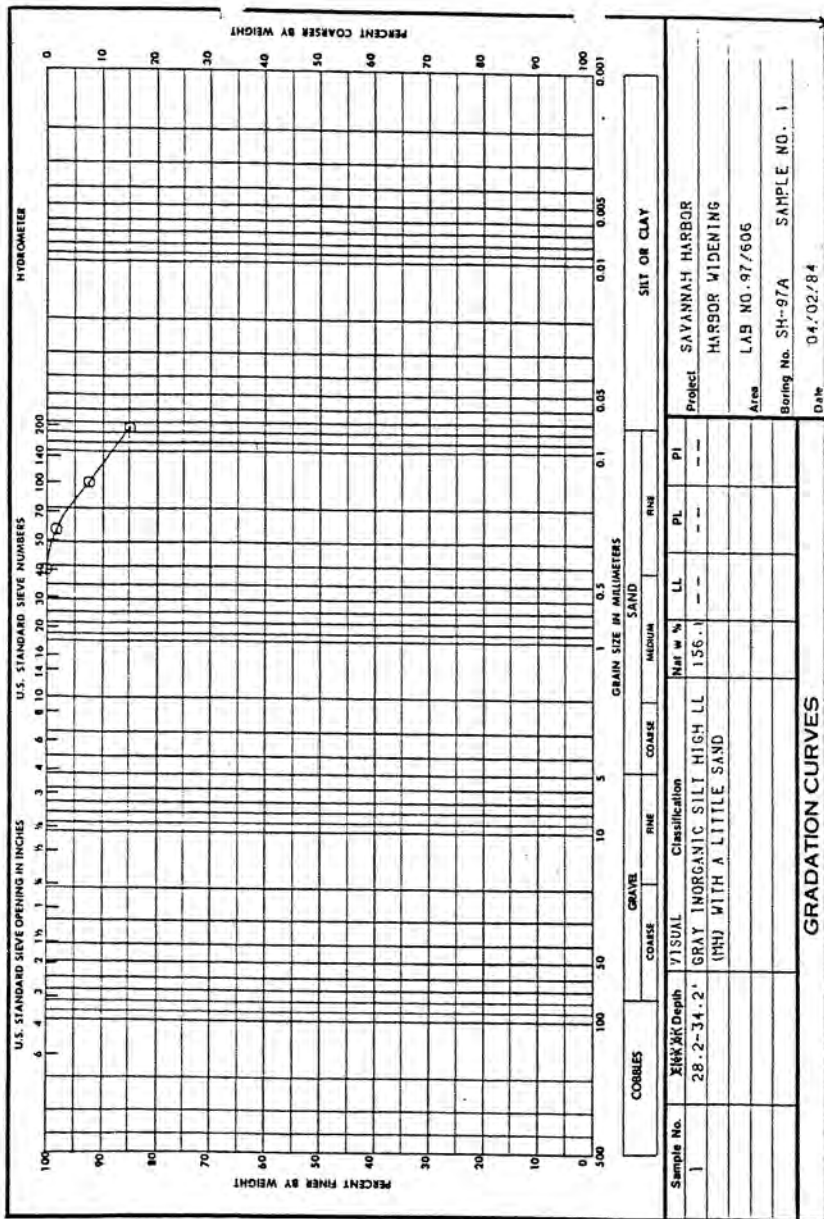


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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

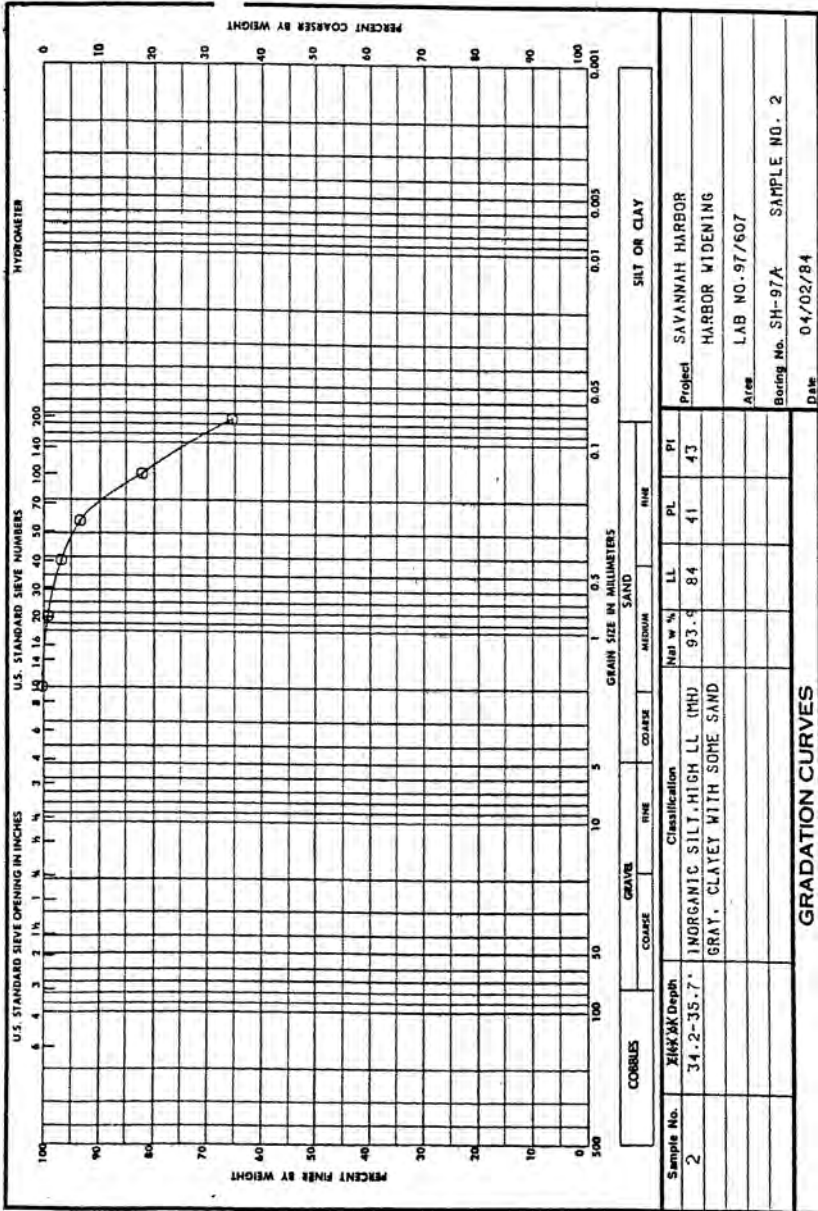


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

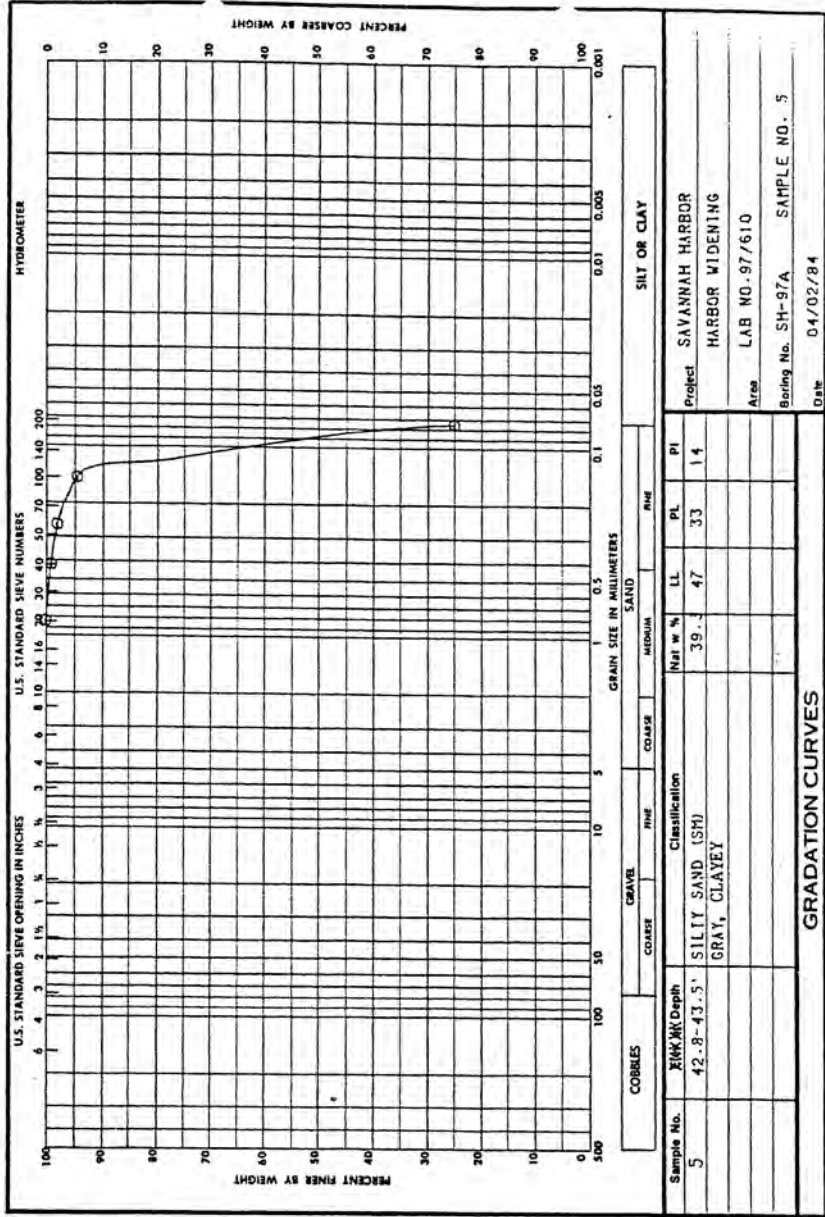


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

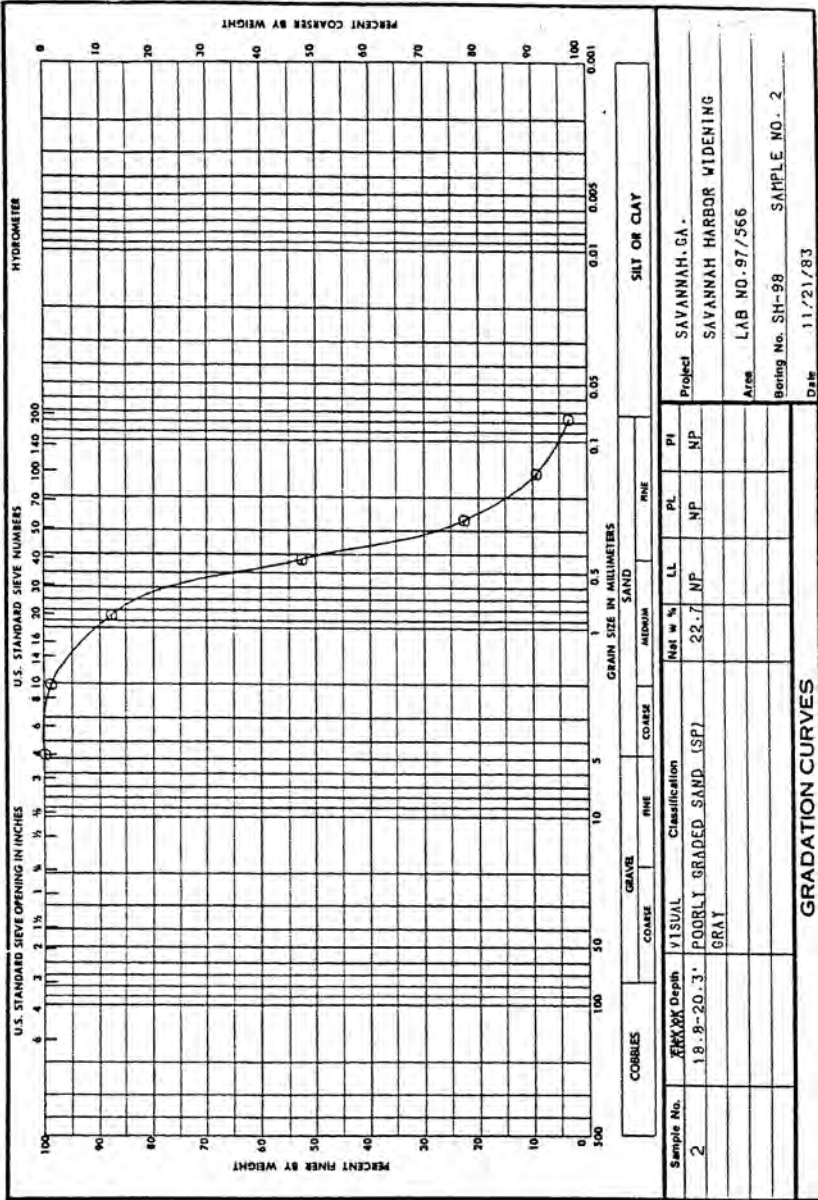


ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

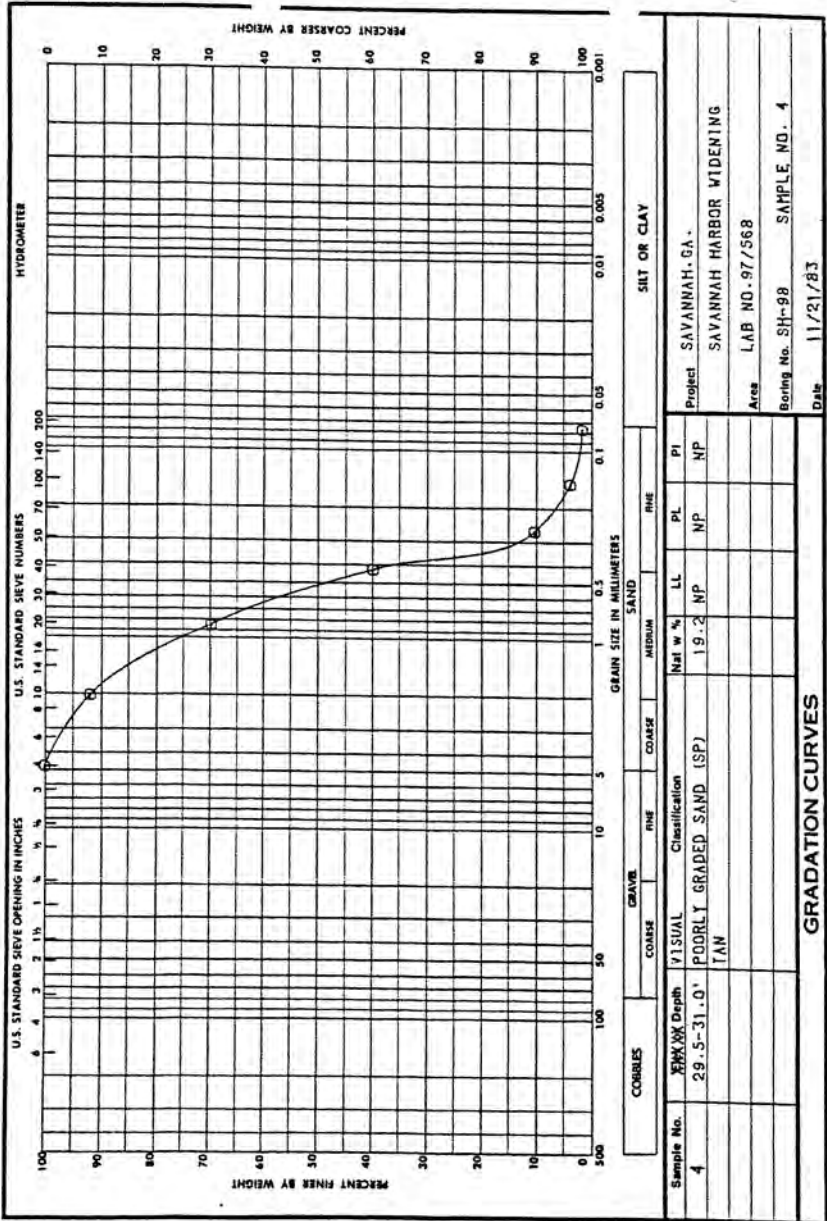
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63



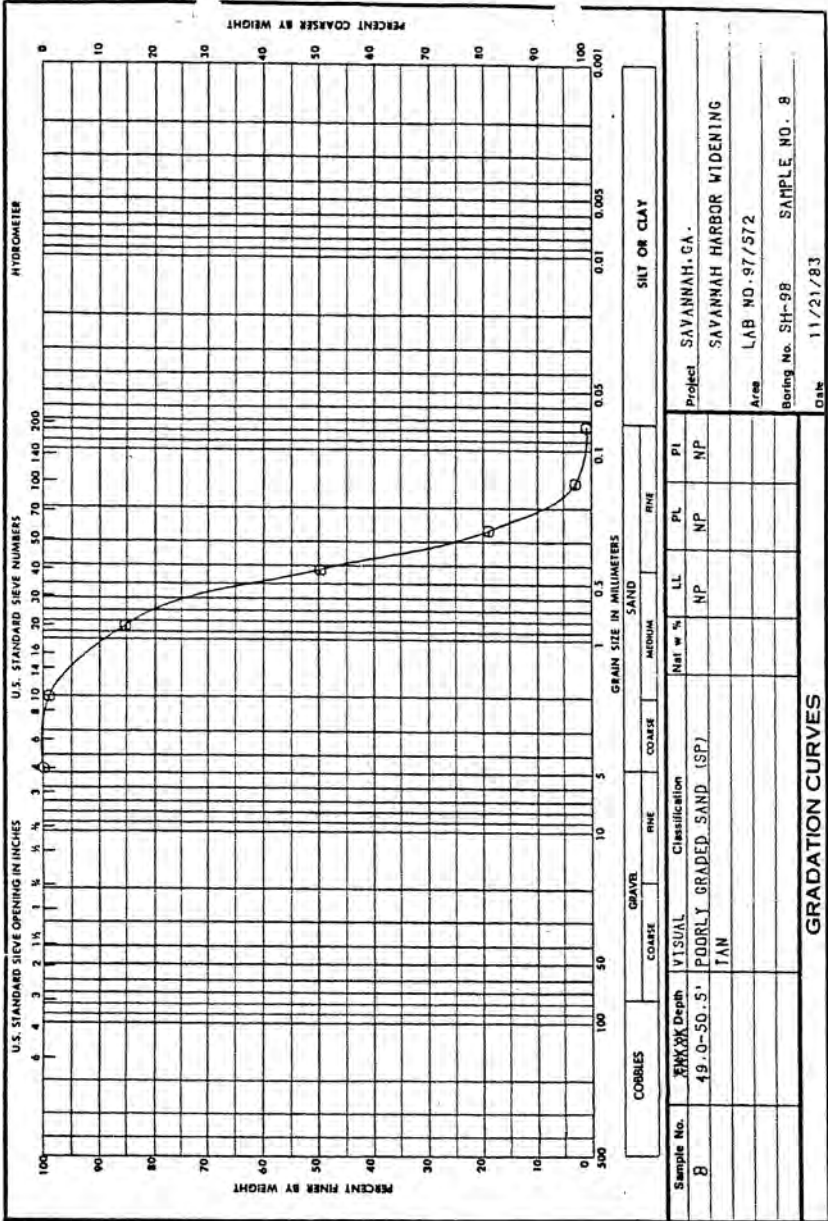
Req. No. EN-GS-84-03





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

Req. No. EN-65-84-03

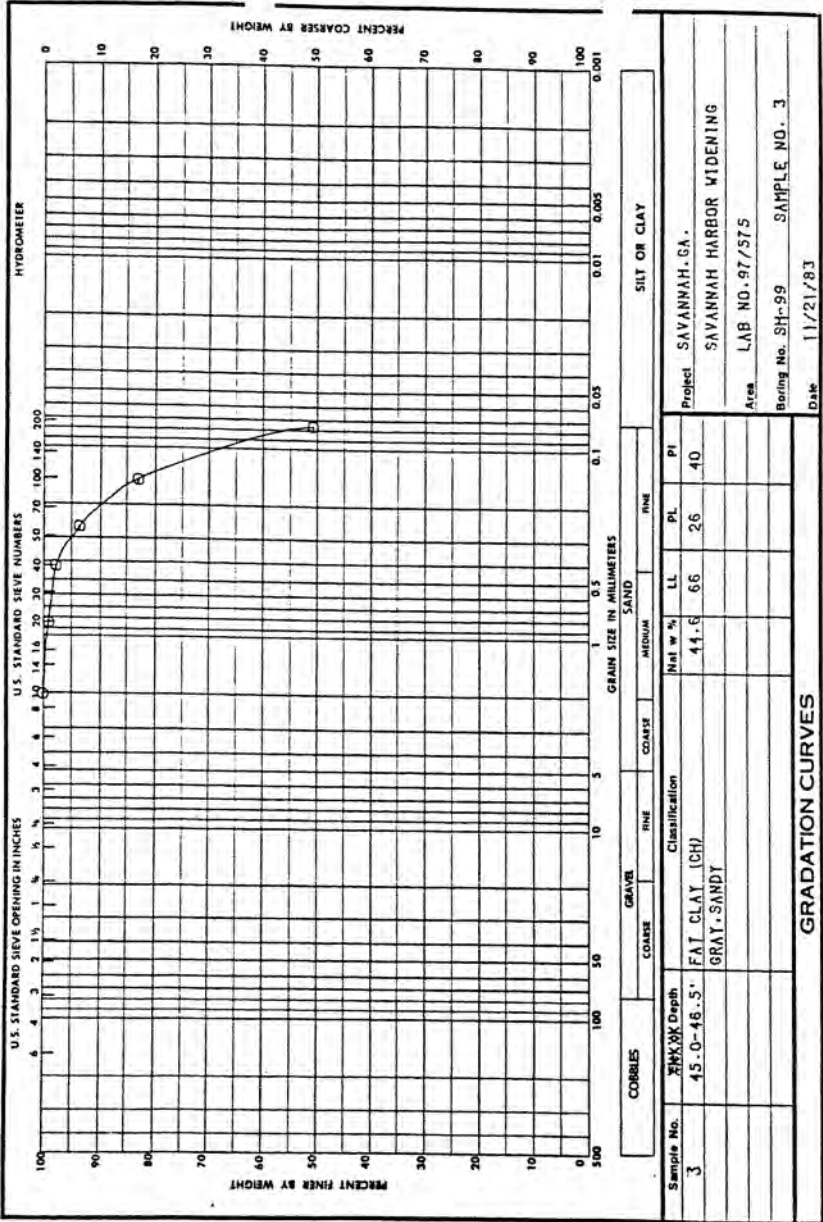


ENG. FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

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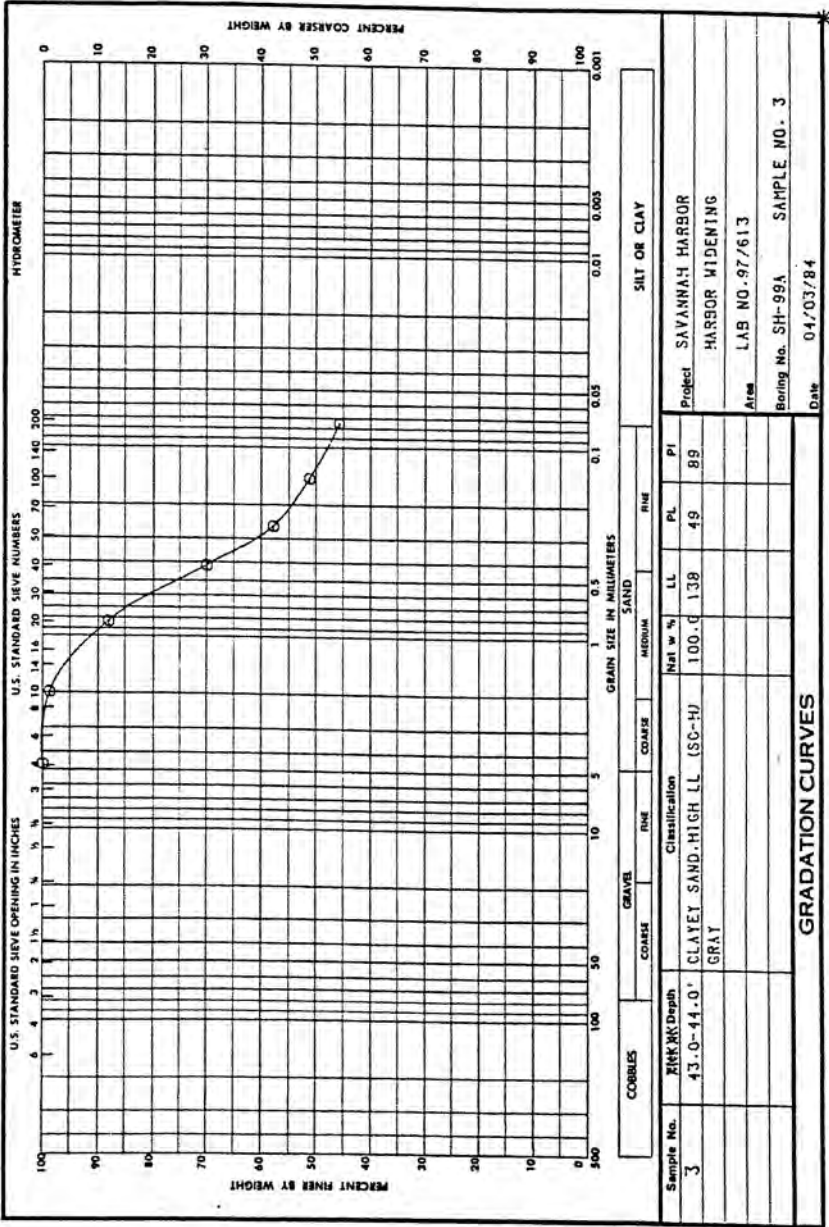
ENG FORM 2087  
1 MAY 63

|                                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                         |                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>GENERAL TEST REPORT</b><br><b>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC</b><br><b>CORPS OF ENGINEERS</b><br><b>MARIETTA, GEORGIA</b> |                           | <b>DISTRICT/OFFICE</b><br>Savannah                                                                                                                                                                                                                                                                      |                                |
| <b>PROJECT</b><br>Savannah Harbor Widening                                                                                                           |                           | <b>CONTRACT NO.</b><br>---                                                                                                                                                                                                                                                                              |                                |
|                                                                                                                                                      |                           | <b>DATE REPORTED</b><br>10 April 1984<br><b>WORK ORDER NO.</b><br>3778                                                                                                                                                                                                                                  |                                |
| <b>TYPE SAMPLE</b><br>Jar Samples of Disturbed Soils                                                                                                 |                           | <b>REQN. NO.</b><br>EN-GS-84-03 (CH. 1)                                                                                                                                                                                                                                                                 |                                |
| <b>SOURCE</b><br>Hole No. SH-99A                                                                                                                     |                           | <b>BASE UNIT COST</b><br>--                                                                                                                                                                                                                                                                             |                                |
| <b>FOR USE AS</b><br>Investigation                                                                                                                   |                           | <b>DATE SAMPLE RECEIVED</b><br>1 Sept - 30 Dec 1983                                                                                                                                                                                                                                                     |                                |
| <b>TESTED FOR</b><br>Lab Classification and Field Moisture                                                                                           |                           | <b>LAB NO.</b><br>97/611                                                                                                                                                                                                                                                                                |                                |
| <input type="checkbox"/> <b>MEETS SPECIFICATIONS</b>                                                                                                 |                           | N/A                                                                                                                                                                                                                                                                                                     |                                |
| <input type="checkbox"/> <b>FAILS SPECIFICATIONS (See below)</b>                                                                                     |                           |                                                                                                                                                                                                                                                                                                         |                                |
| <u>Lab No.</u><br>97/611                                                                                                                             | <u>Hole No.</u><br>SH-99A | <u>Sample No.</u><br>1                                                                                                                                                                                                                                                                                  | <u>Depth (ft)</u><br>39.6-41.1 |
| <u>Moisture Content (%)</u><br>87.4                                                                                                                  |                           |                                                                                                                                                                                                                                                                                                         |                                |
| <b>REMARKS:</b>                                                                                                                                      |                           |                                                                                                                                                                                                                                                                                                         |                                |
| <b>REPORTED BY</b><br>DATE _____                                                                                                                     |                           | <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> PHONE    <input type="checkbox"/> WIRE         </div> <div> <b>TESTED BY</b><br/>         NM, CL, JL       </div> <div> <b>CHECKED BY</b><br/>         ES       </div> </div> <b>SAMPLED BY</b><br>District |                                |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA, 30060

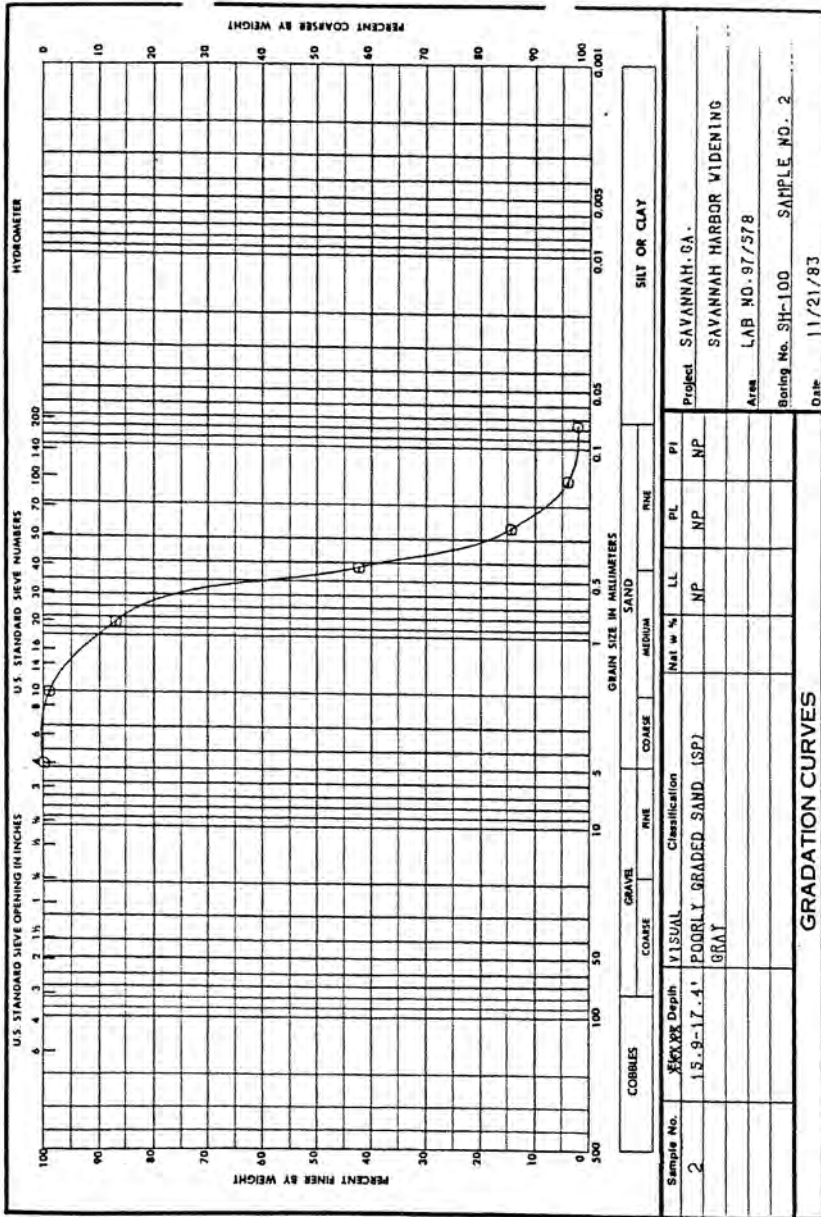
W.O. No. 3778

Req. No. EN-GS-84-03



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. J/18  
Req. No. EN-GS-84-03

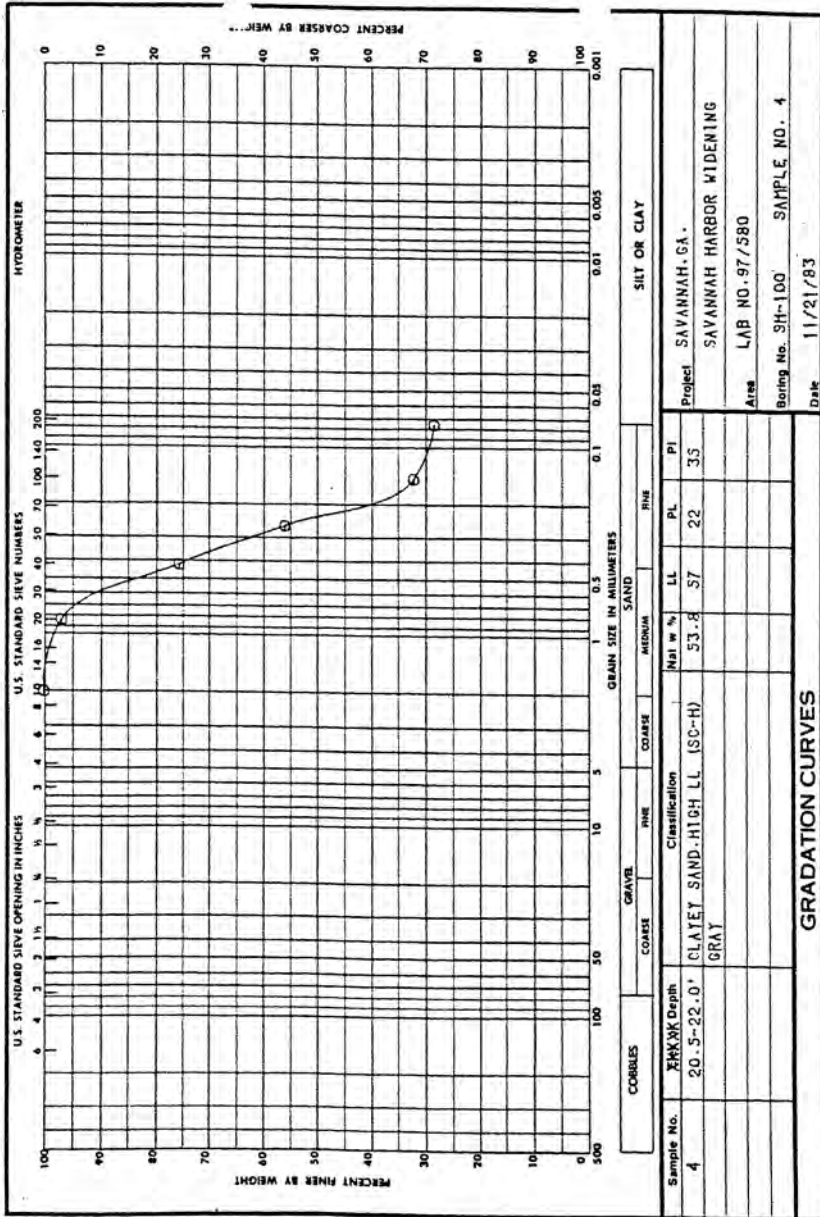


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1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

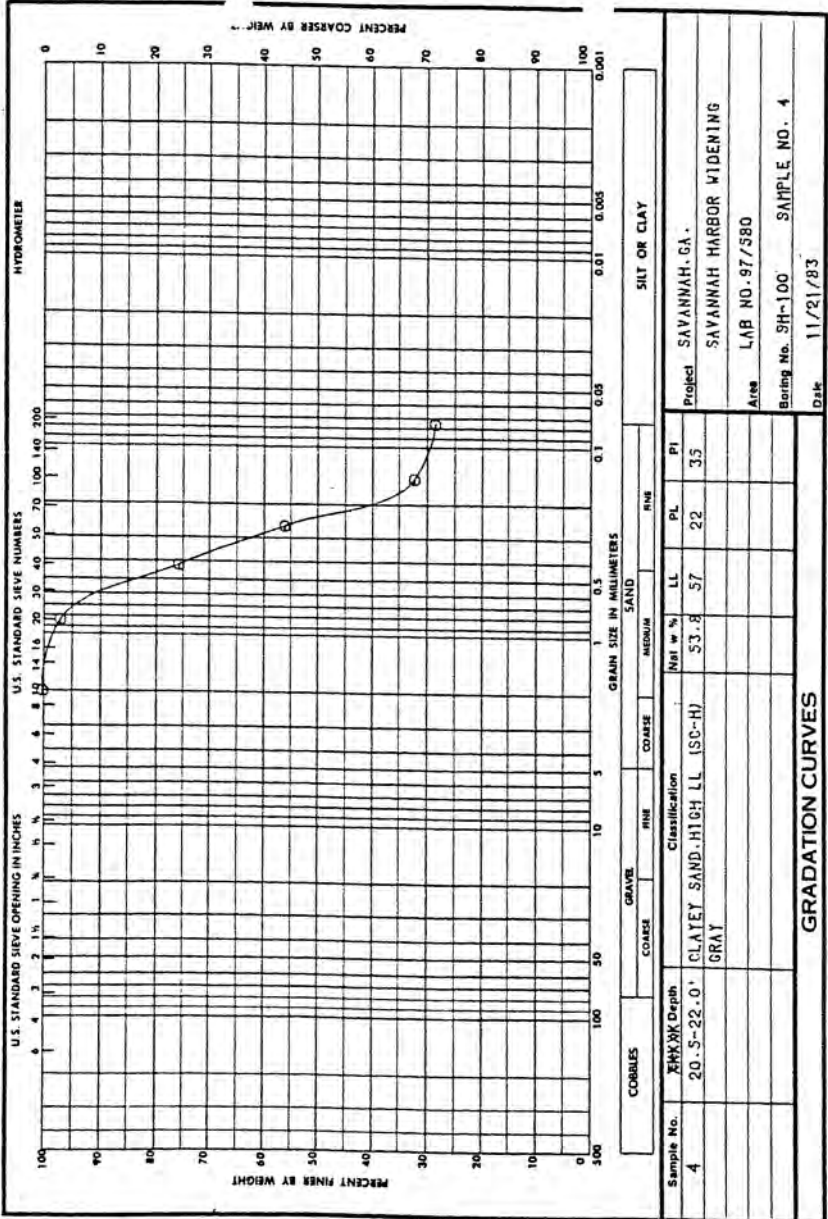


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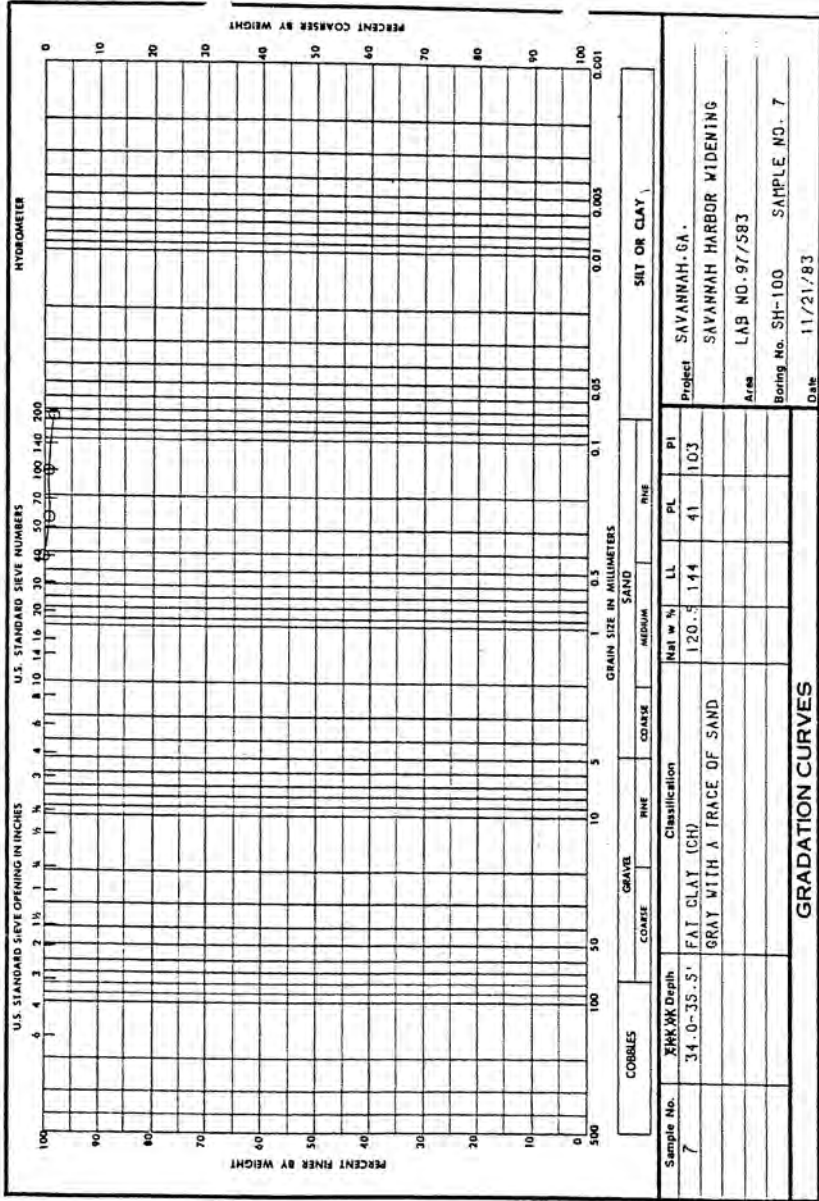


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Req. No. EN-6S-84-03



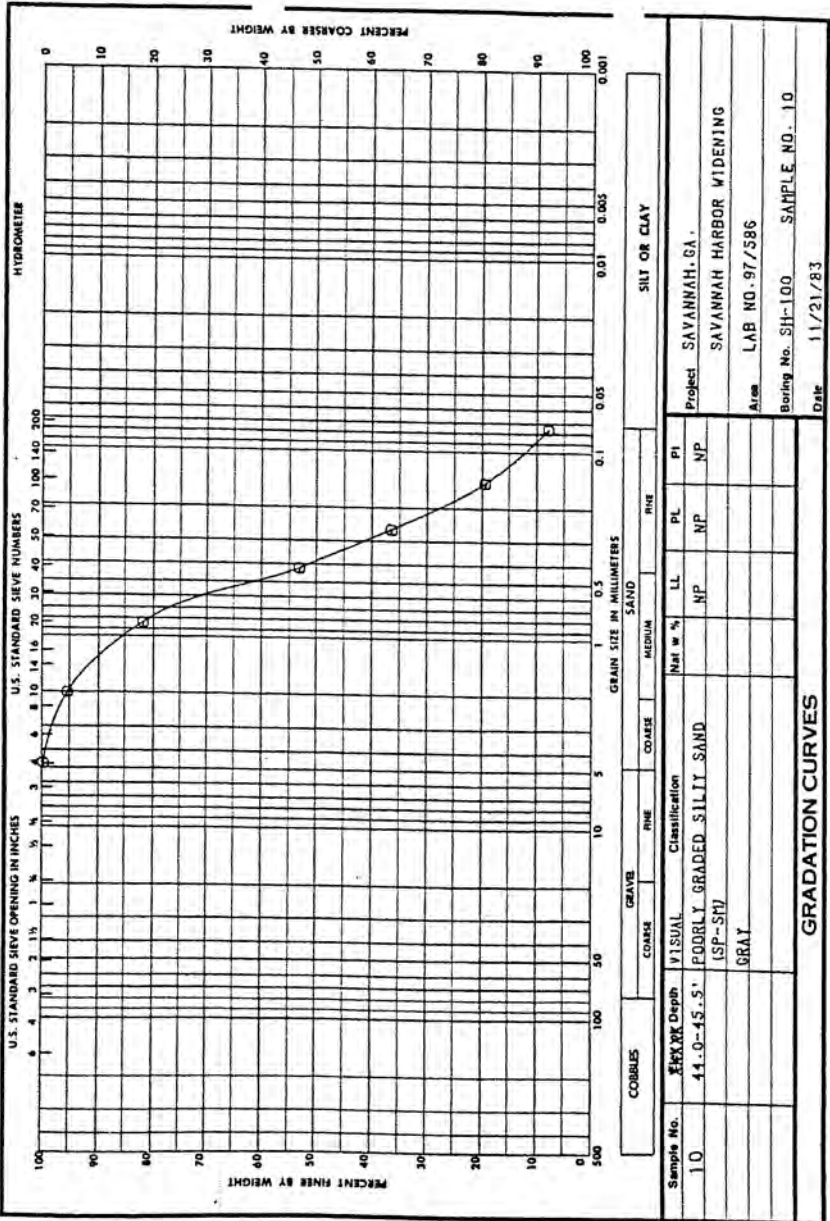
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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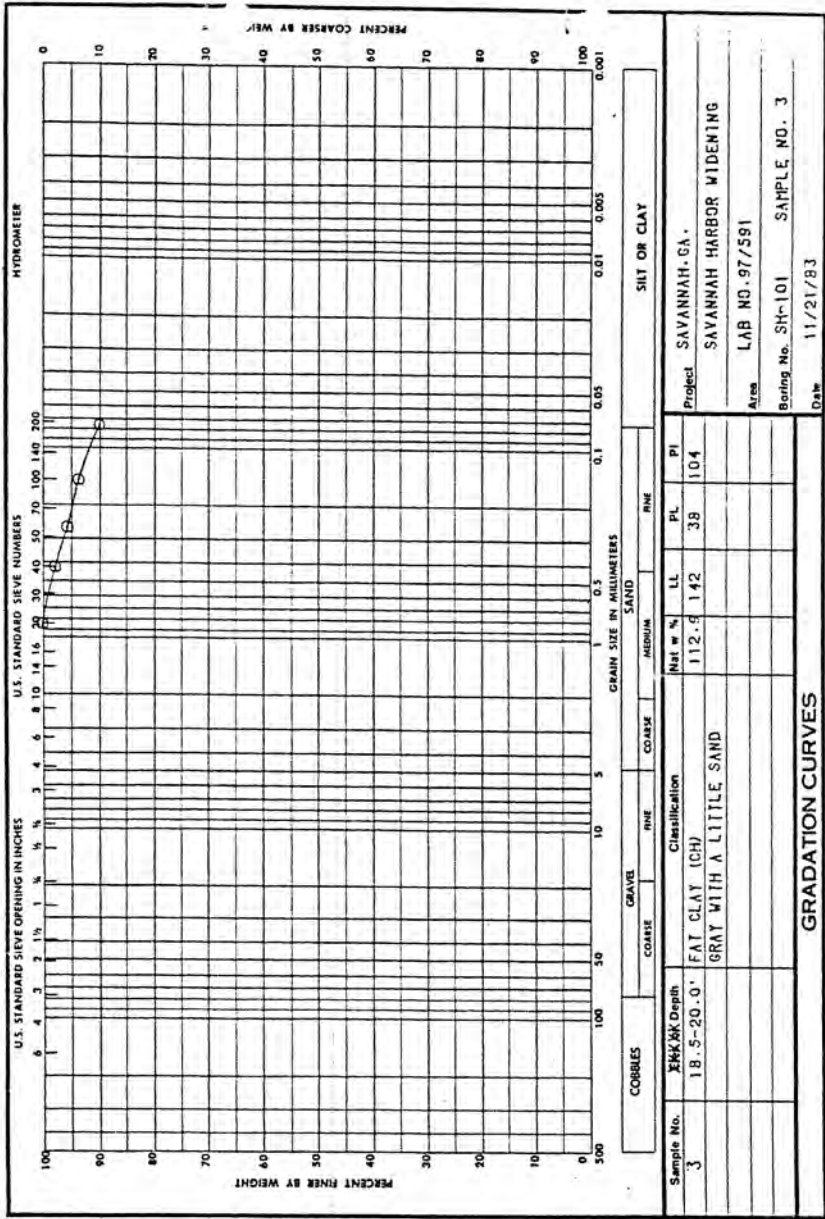
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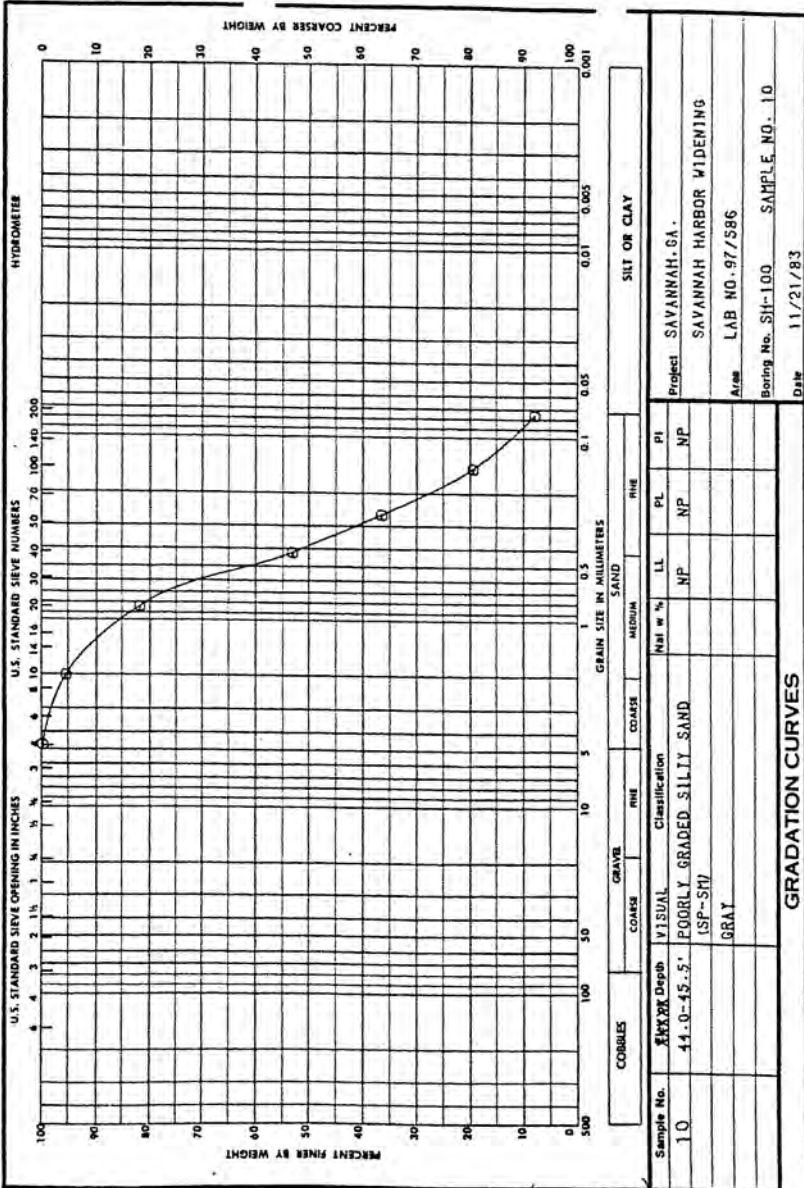
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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



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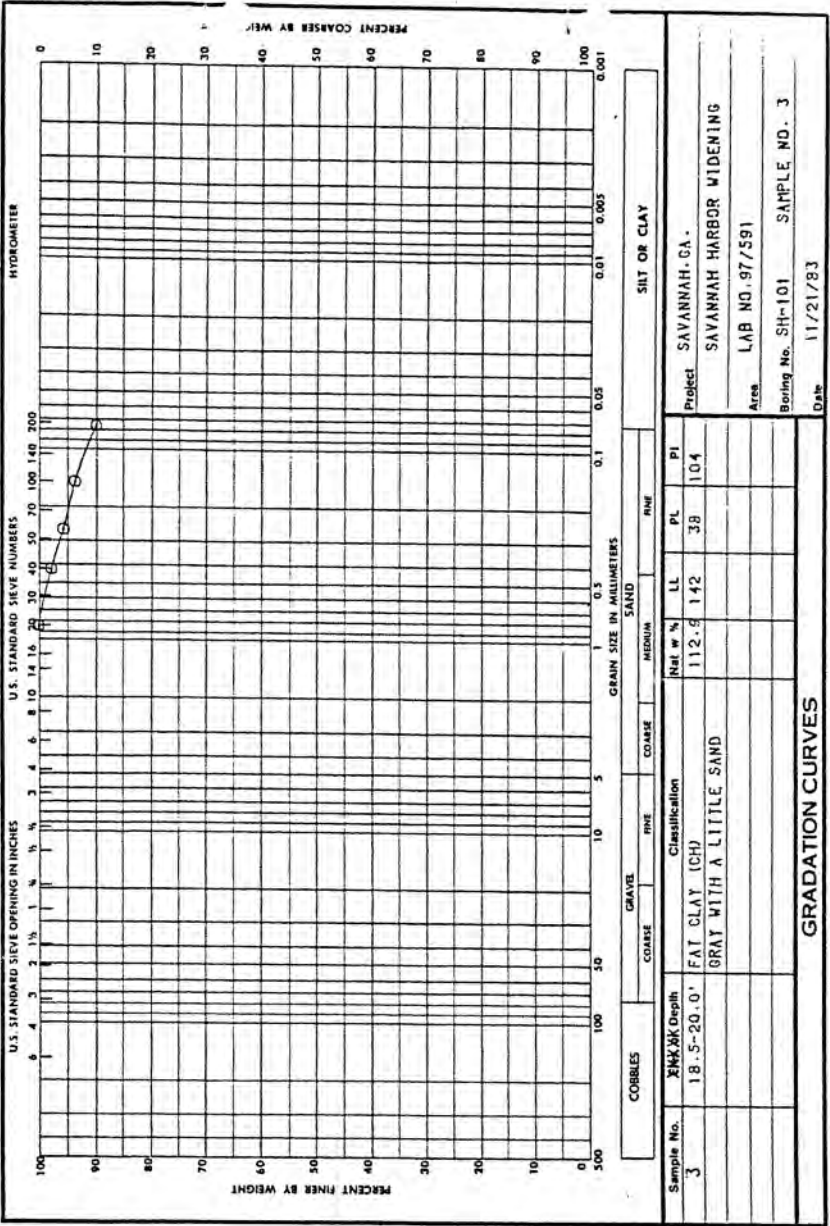
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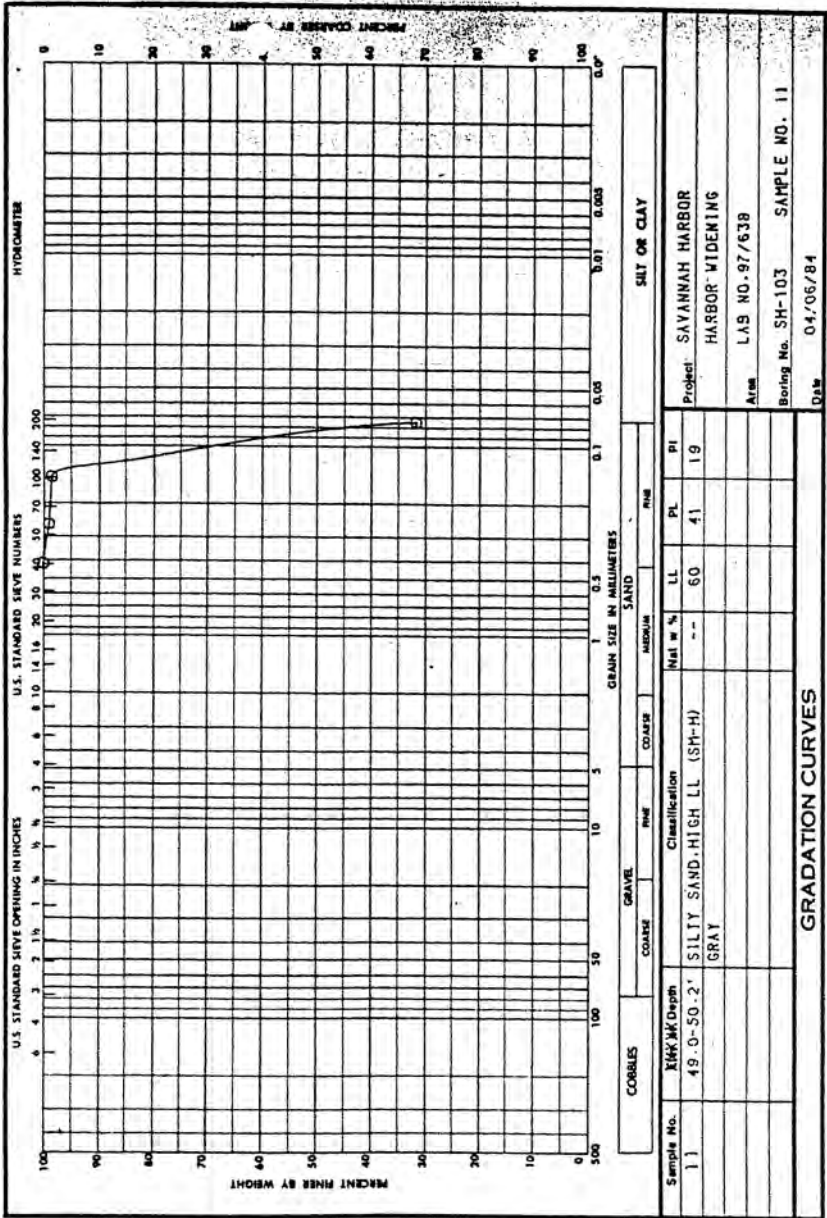
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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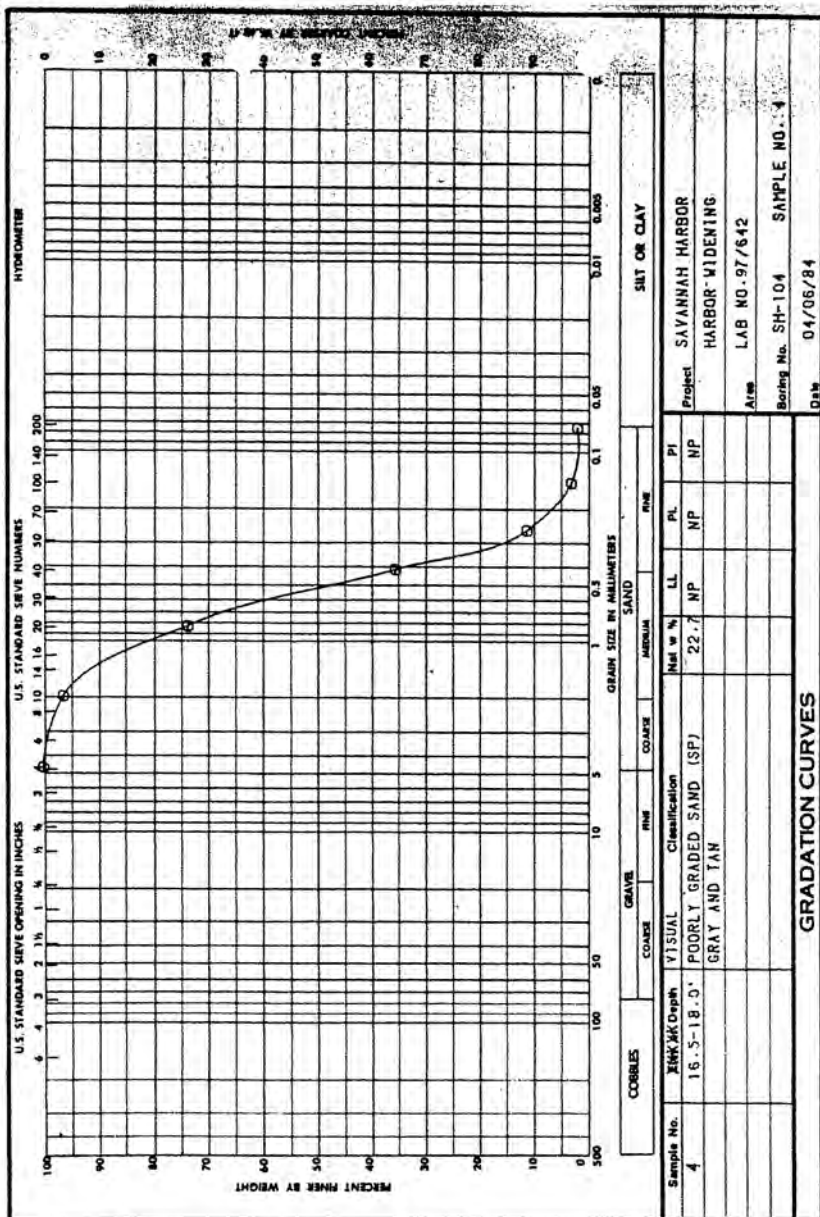


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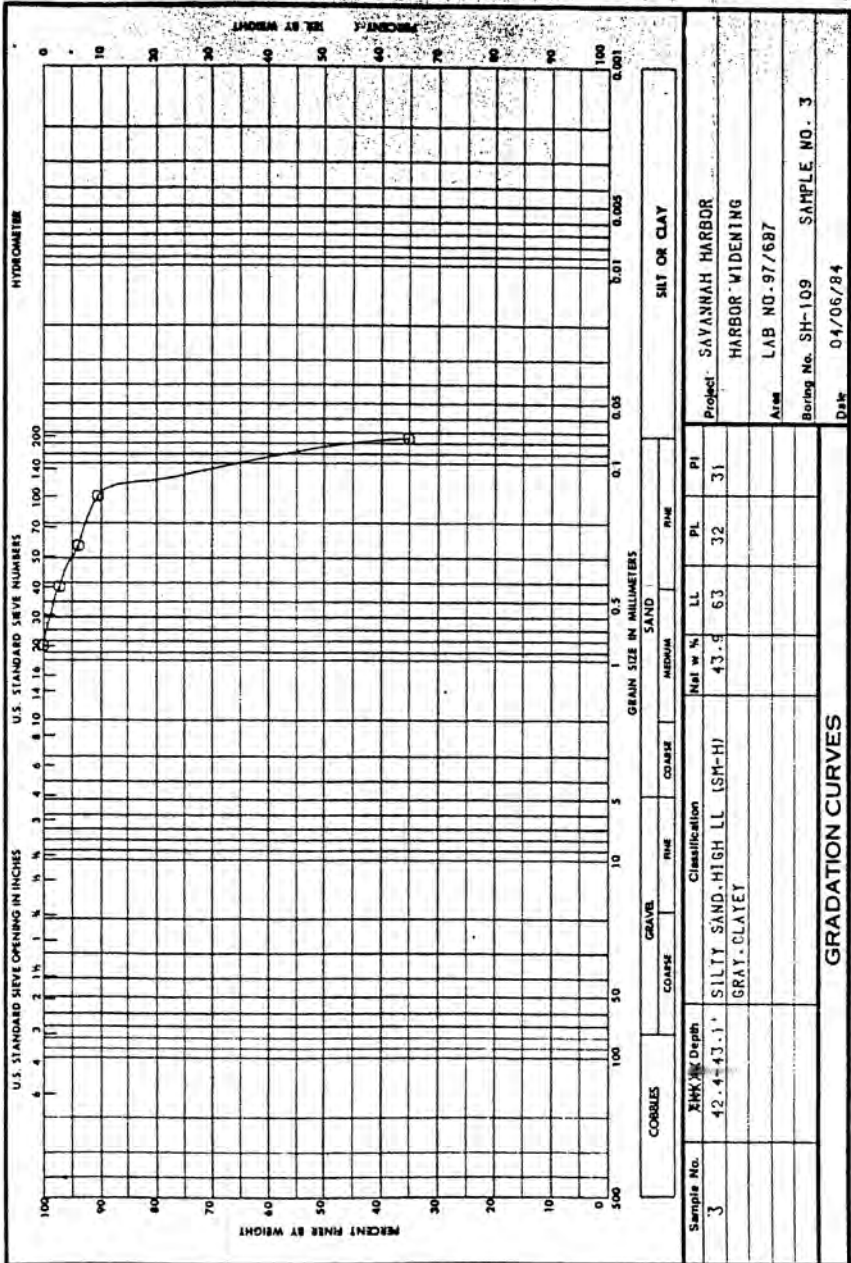
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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



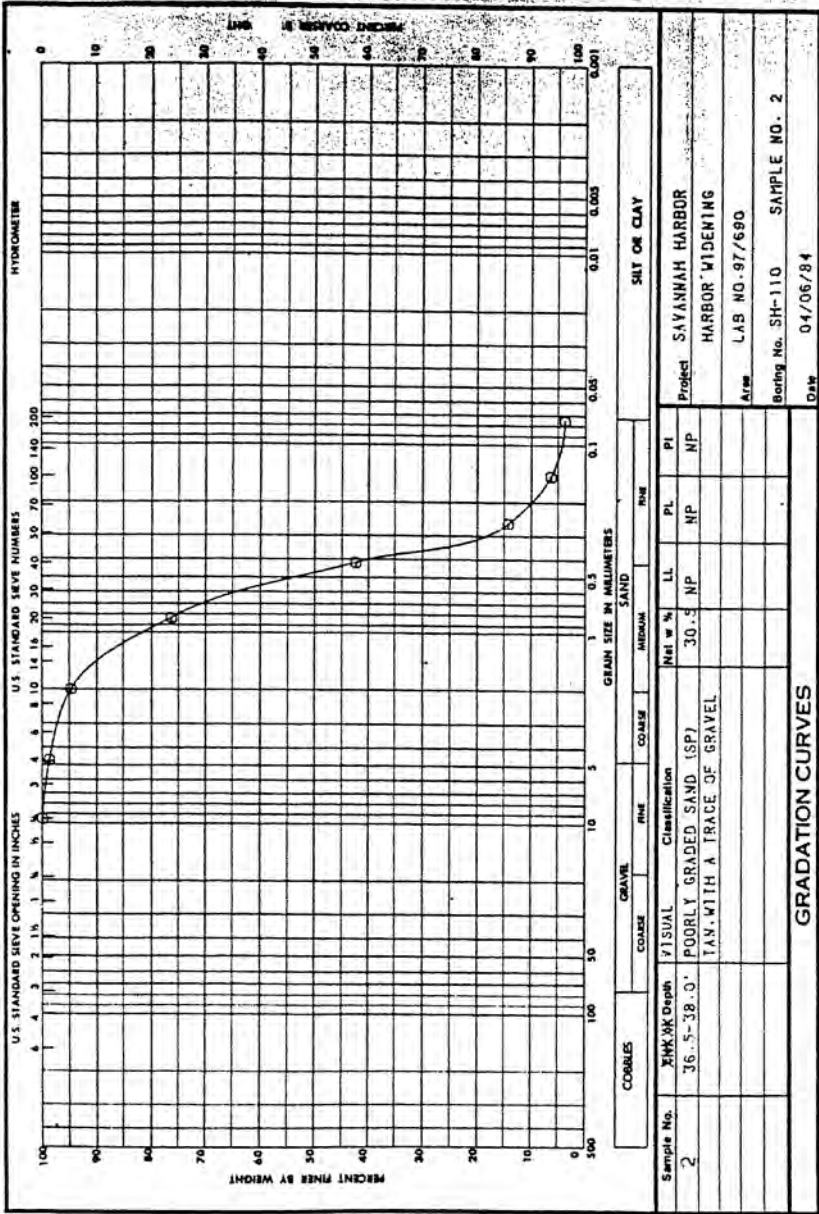
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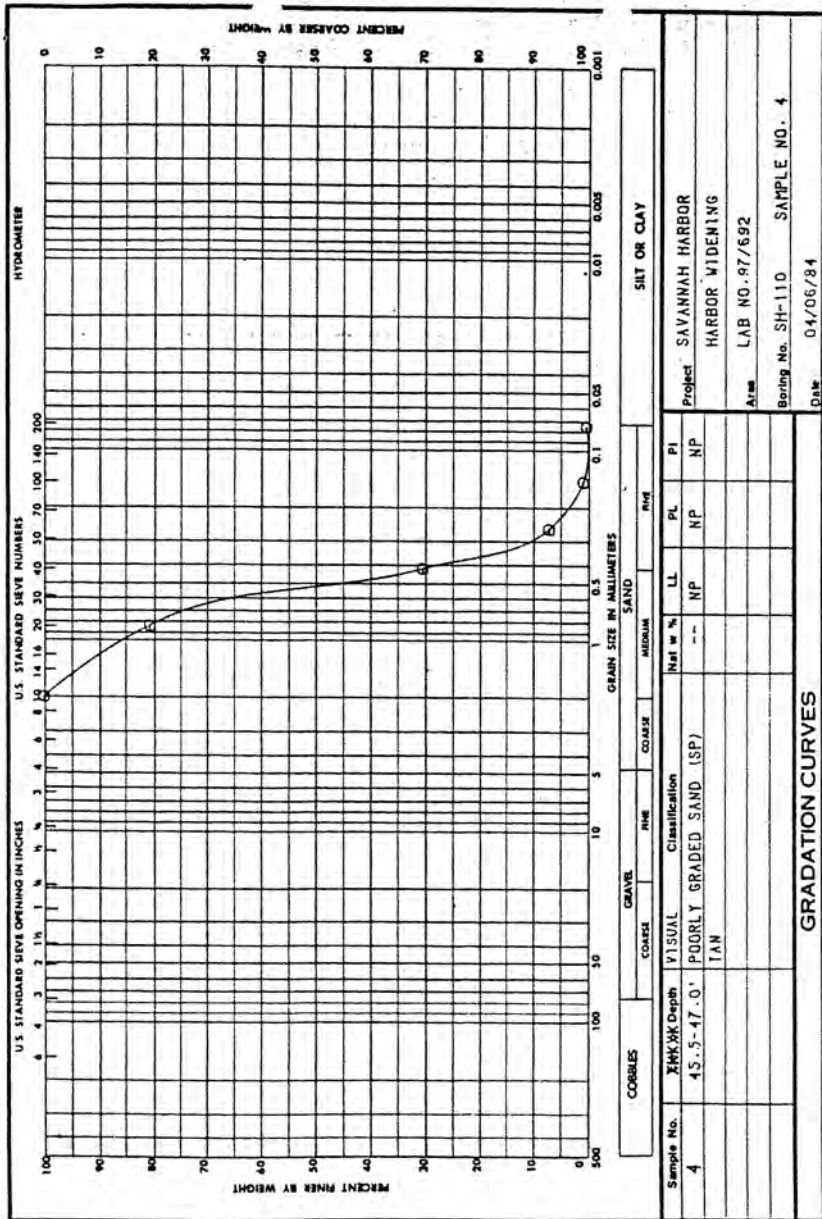
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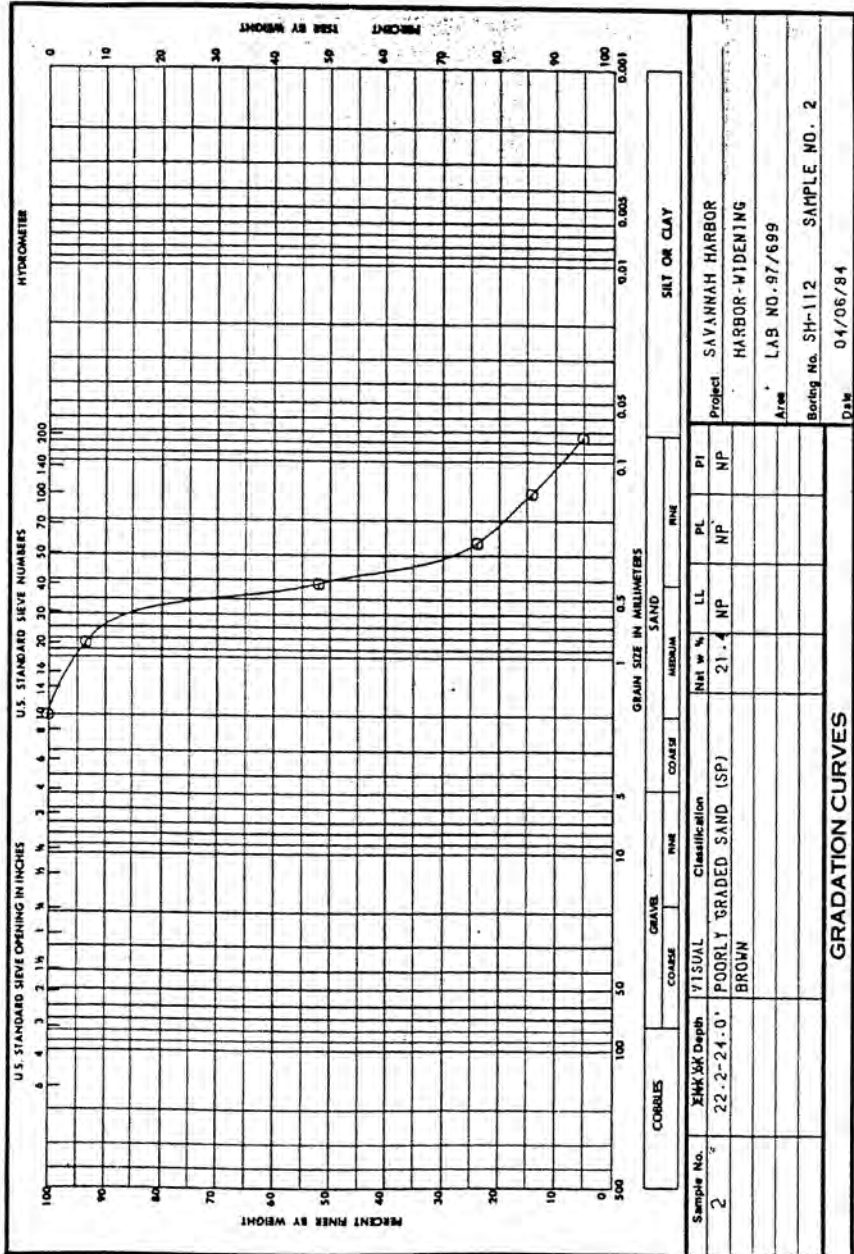


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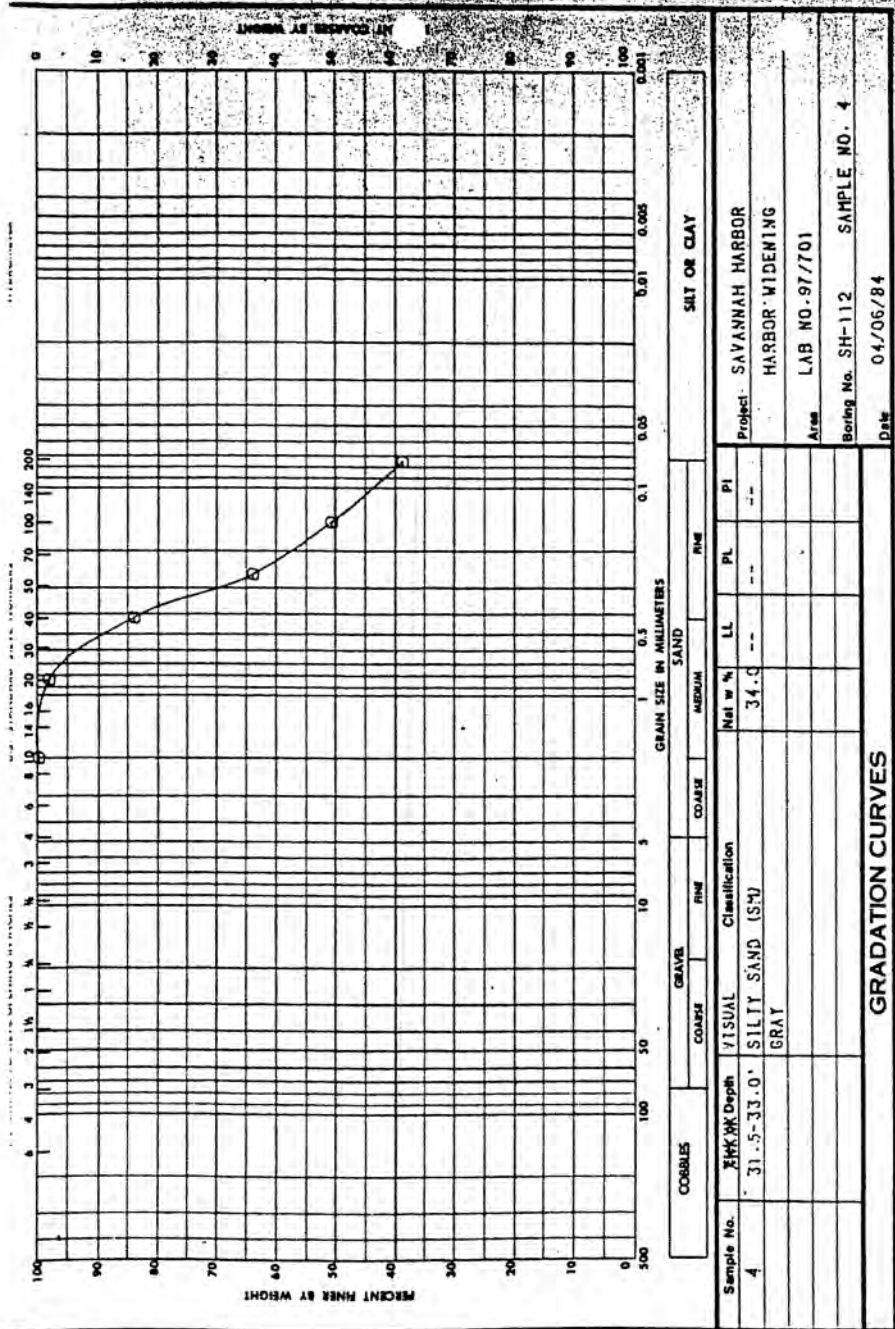


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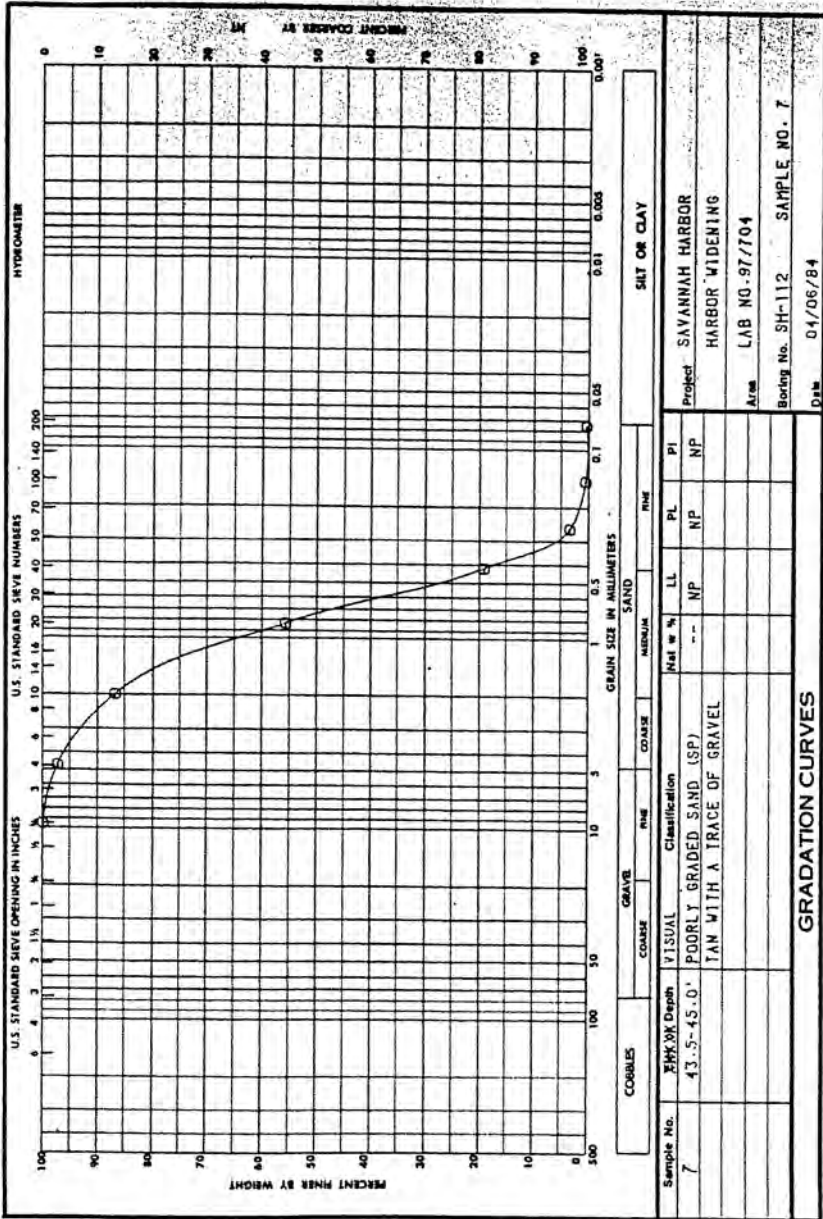
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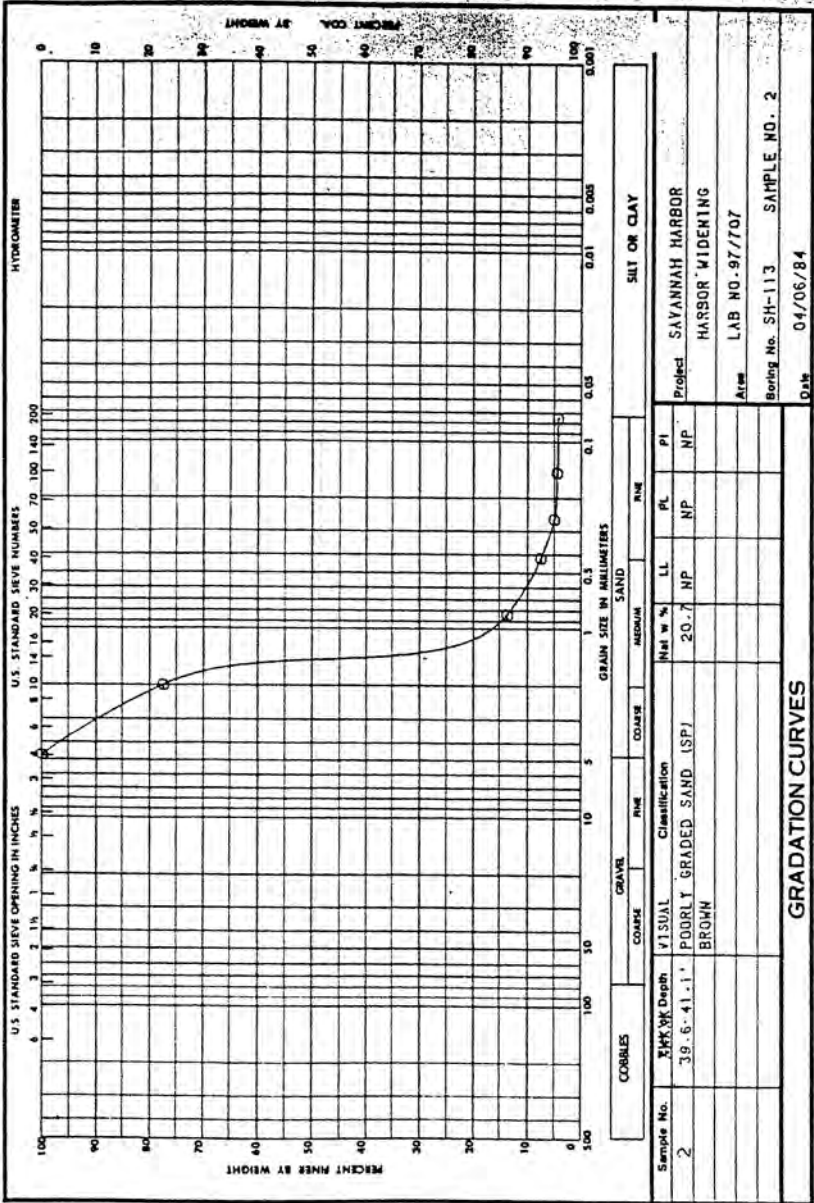
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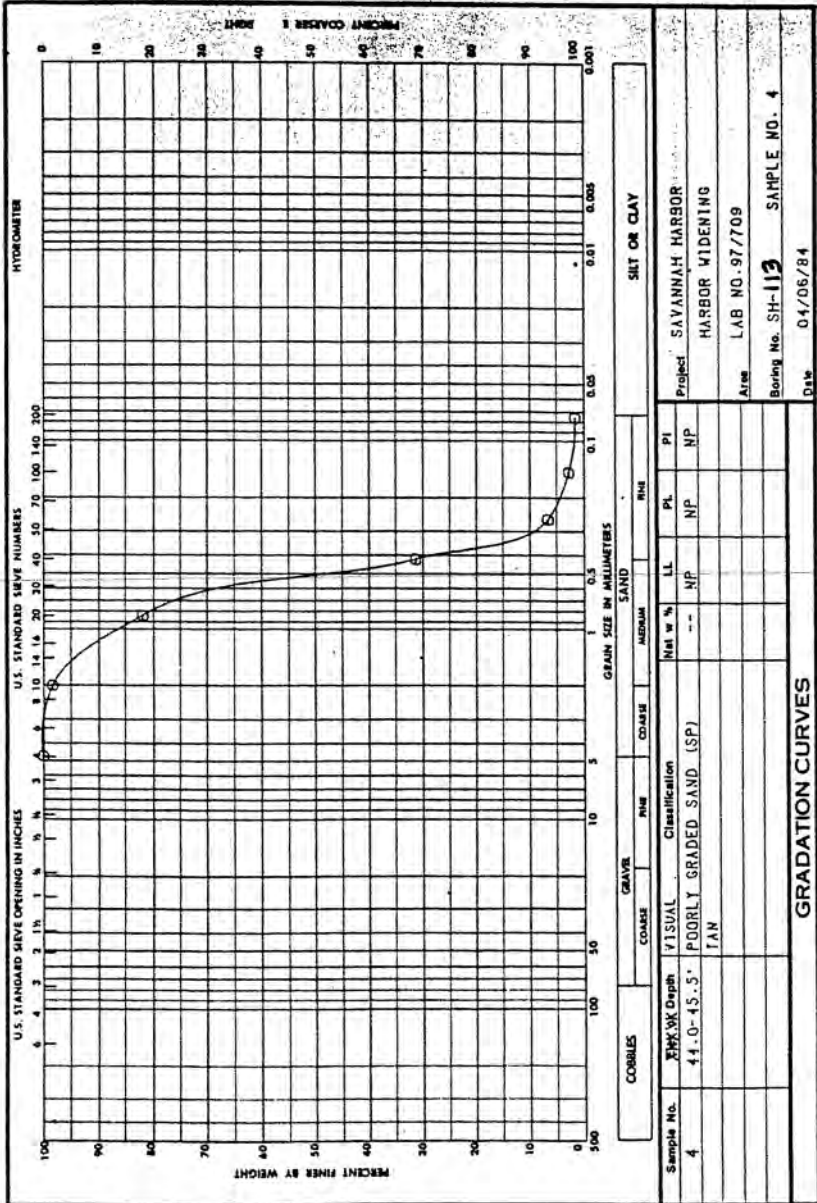
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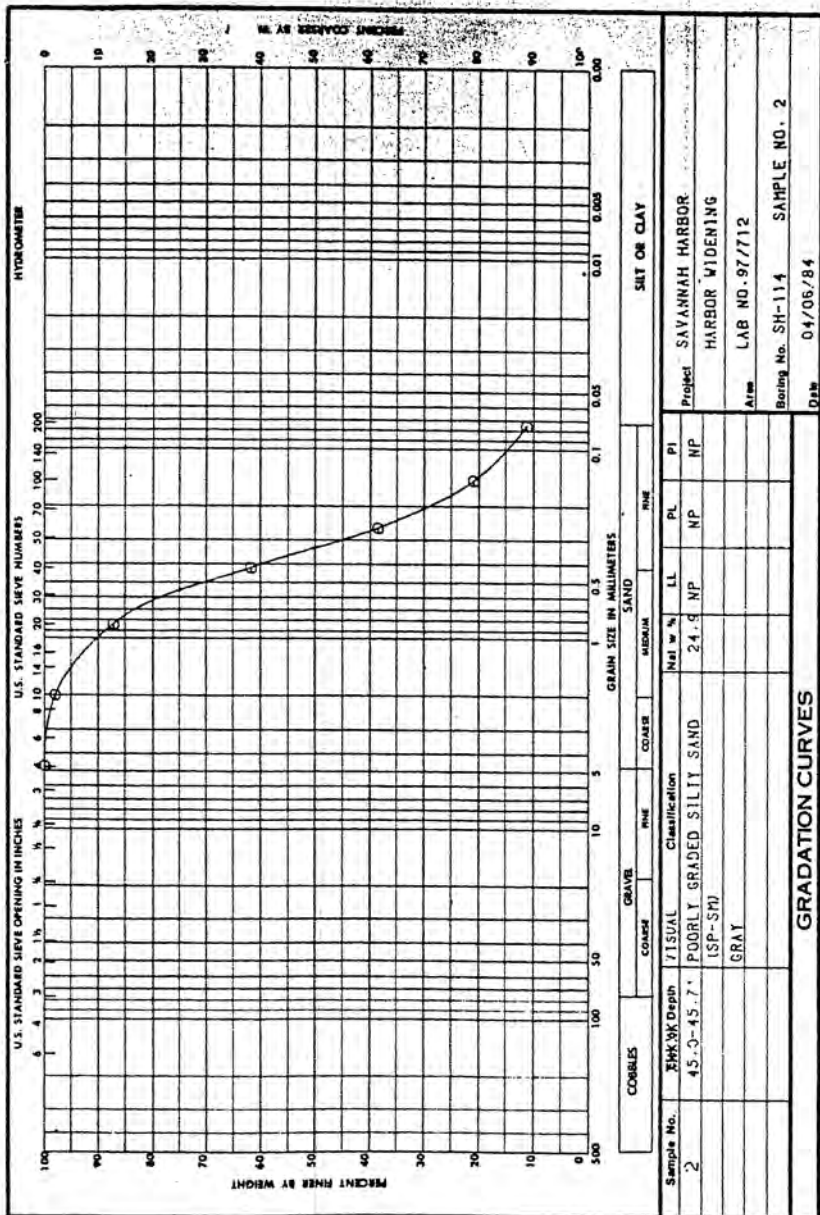
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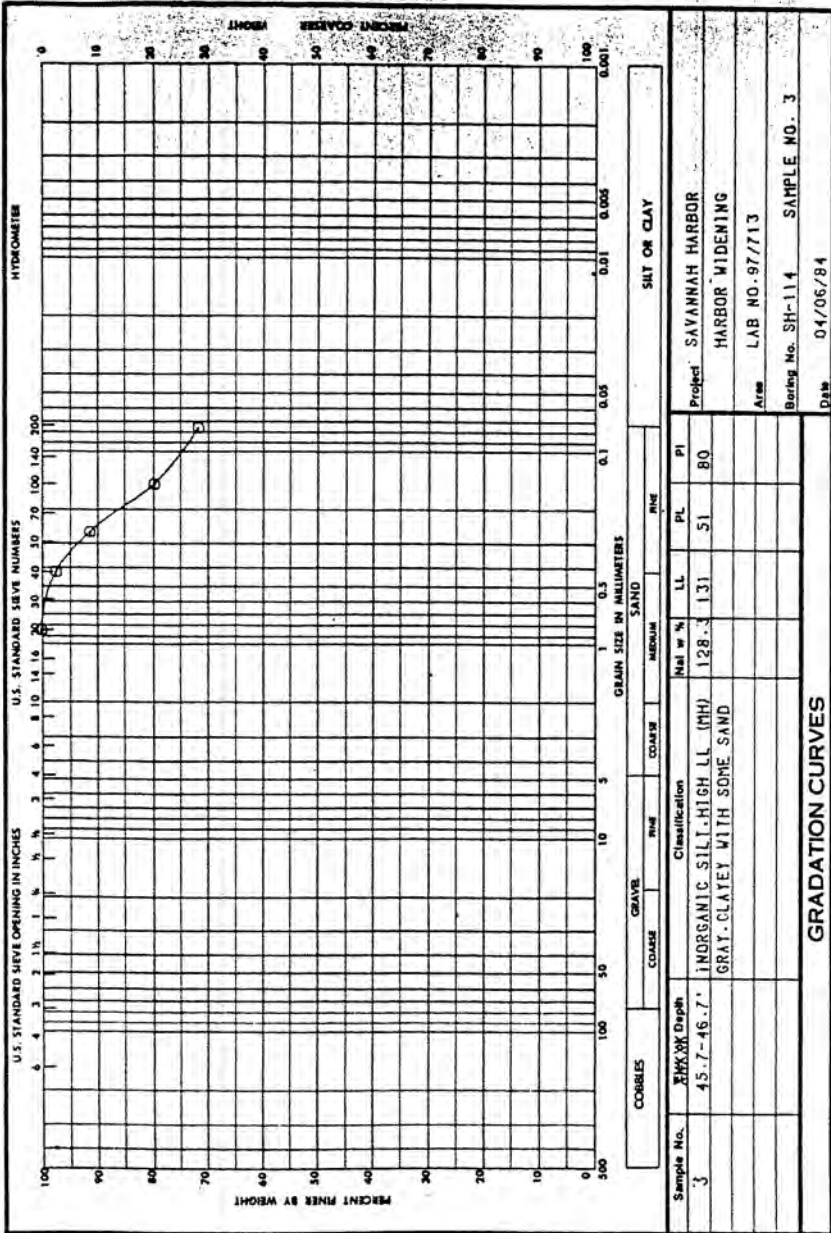


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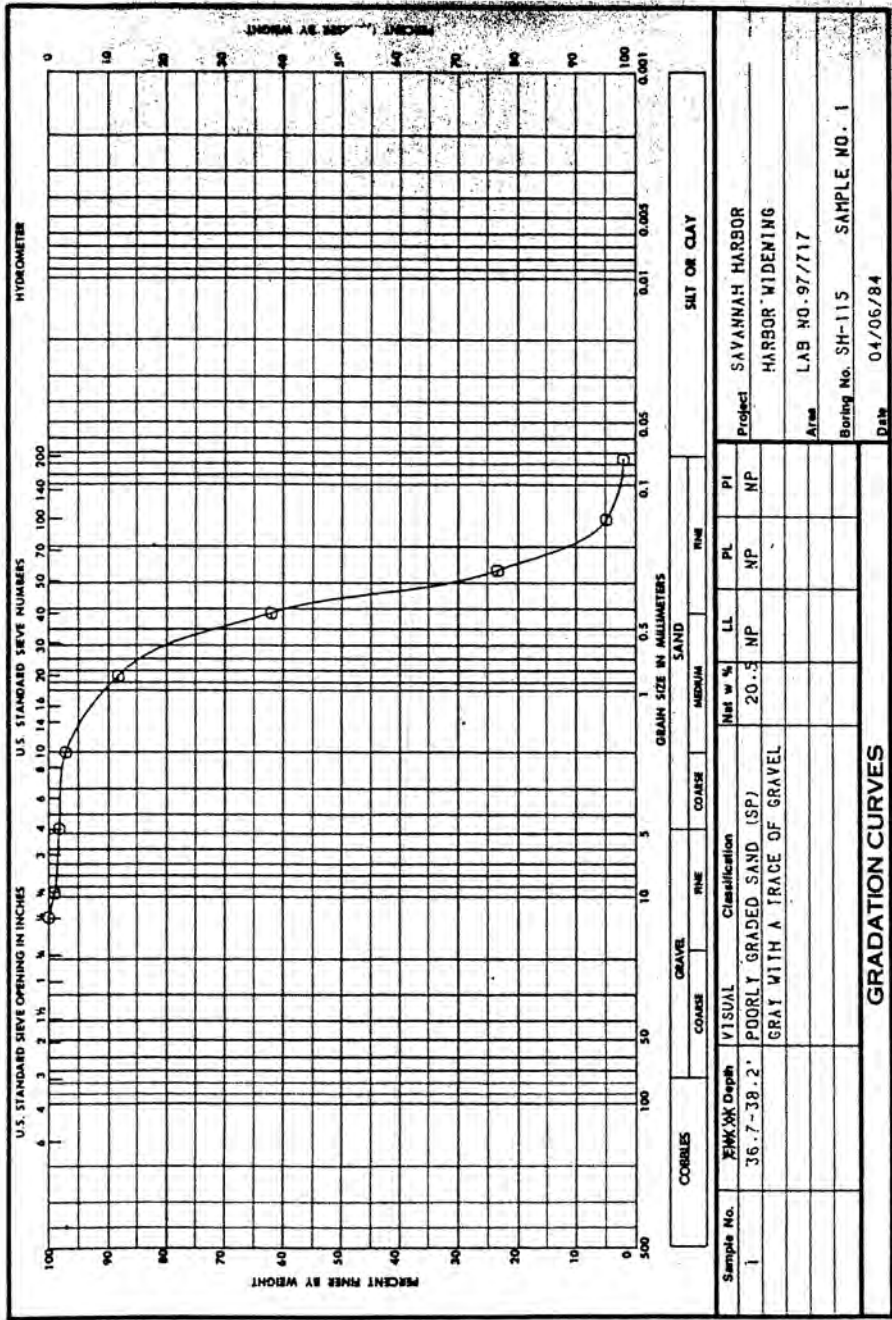


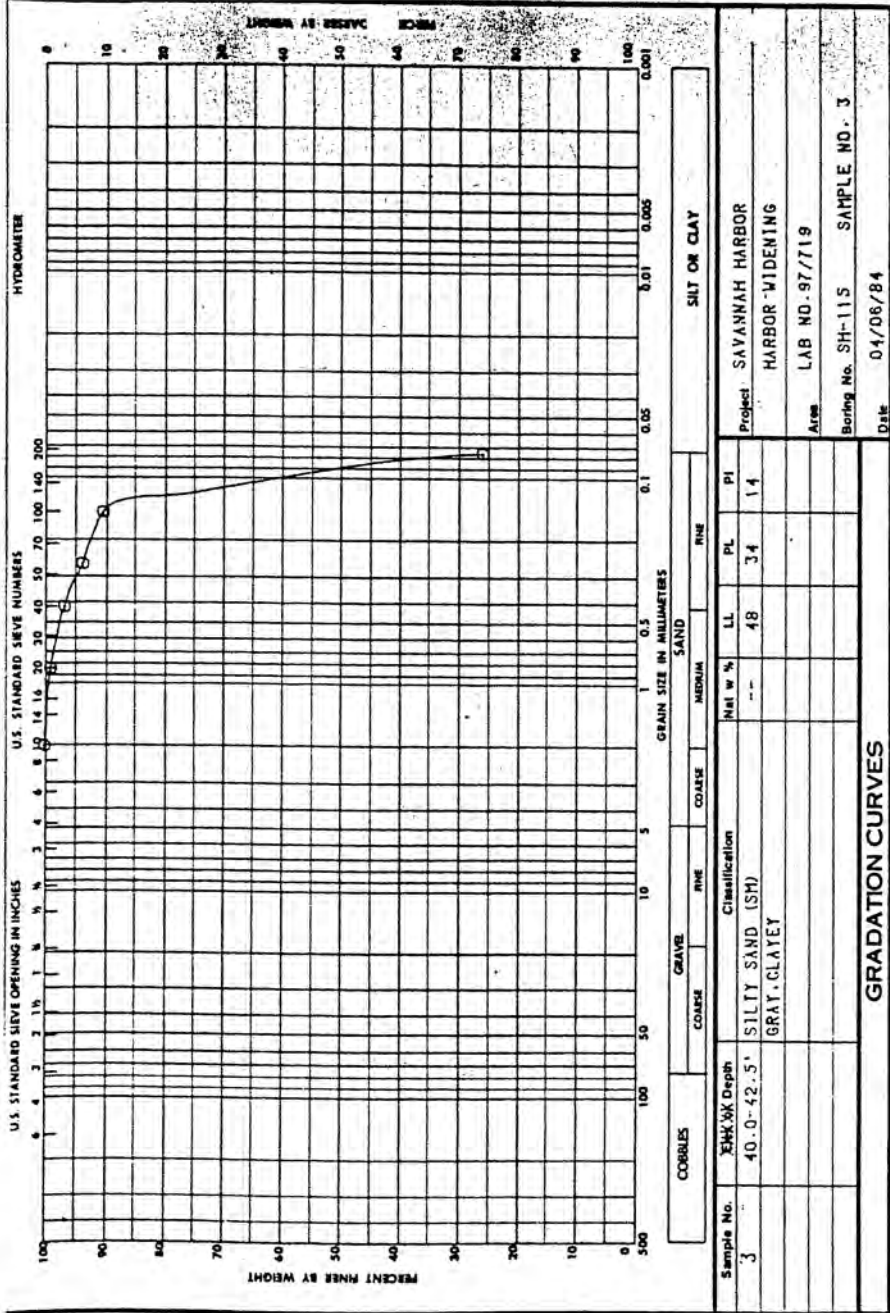
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Req No. EN-6S-84-03



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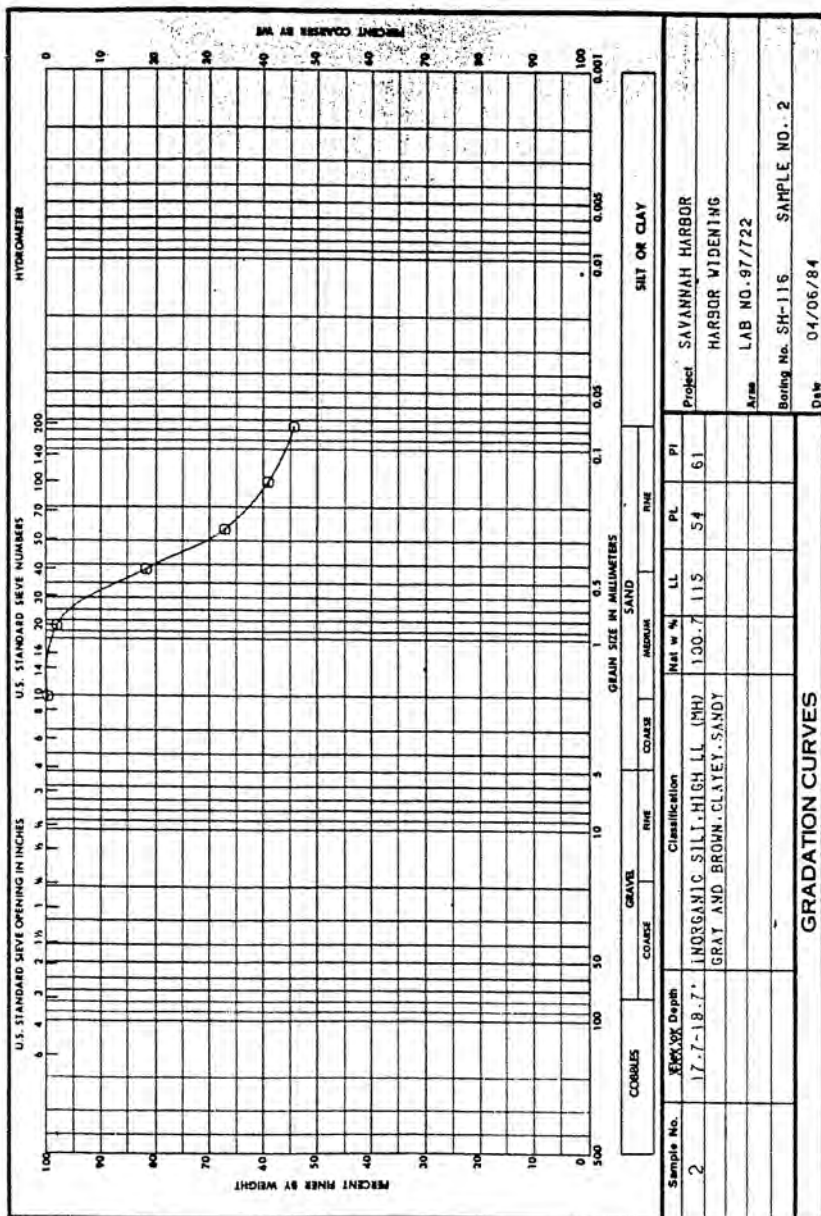




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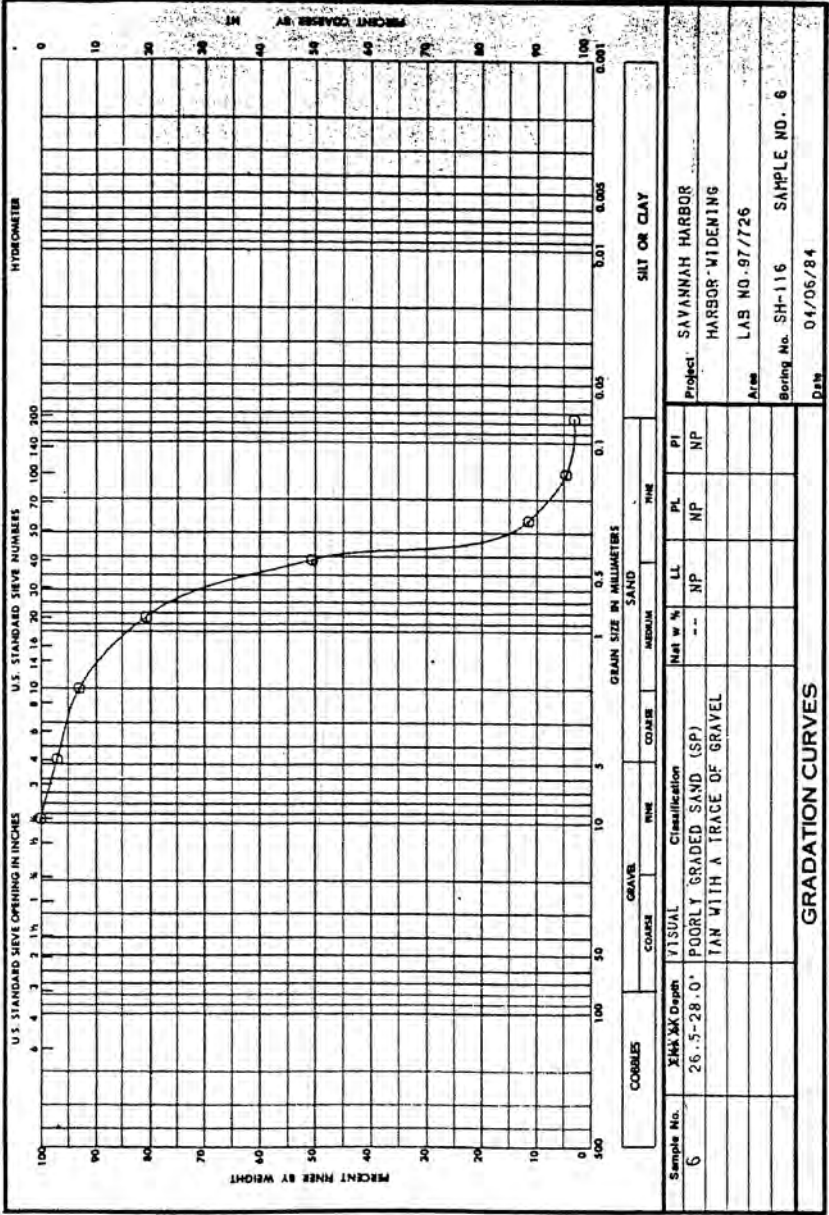


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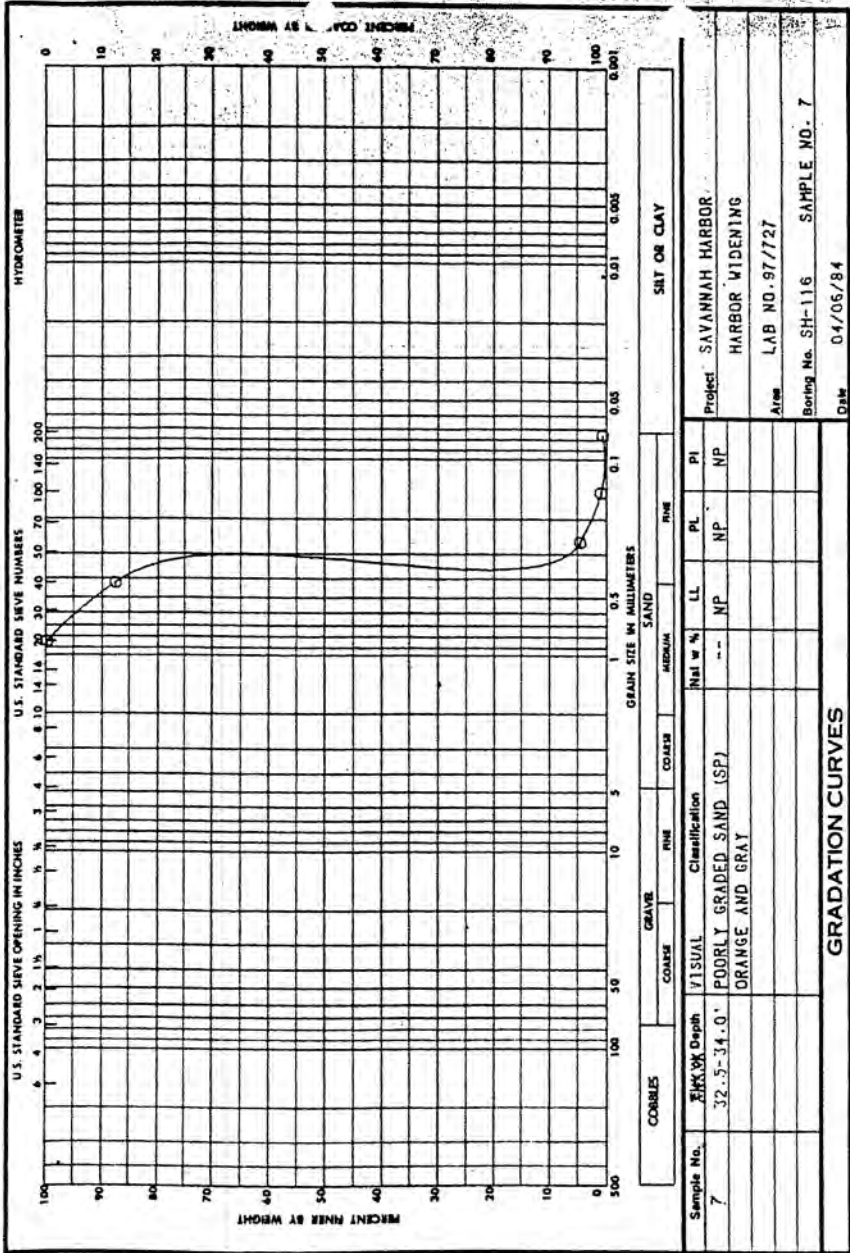
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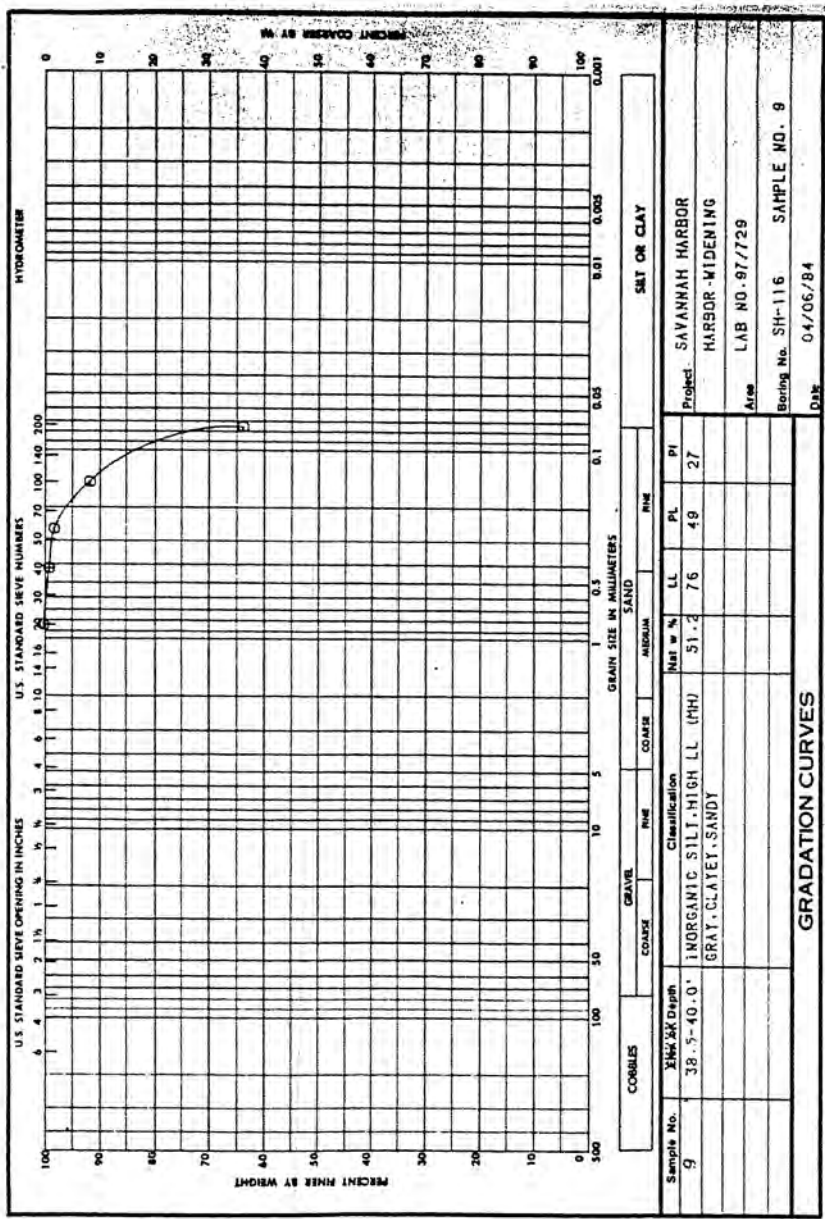


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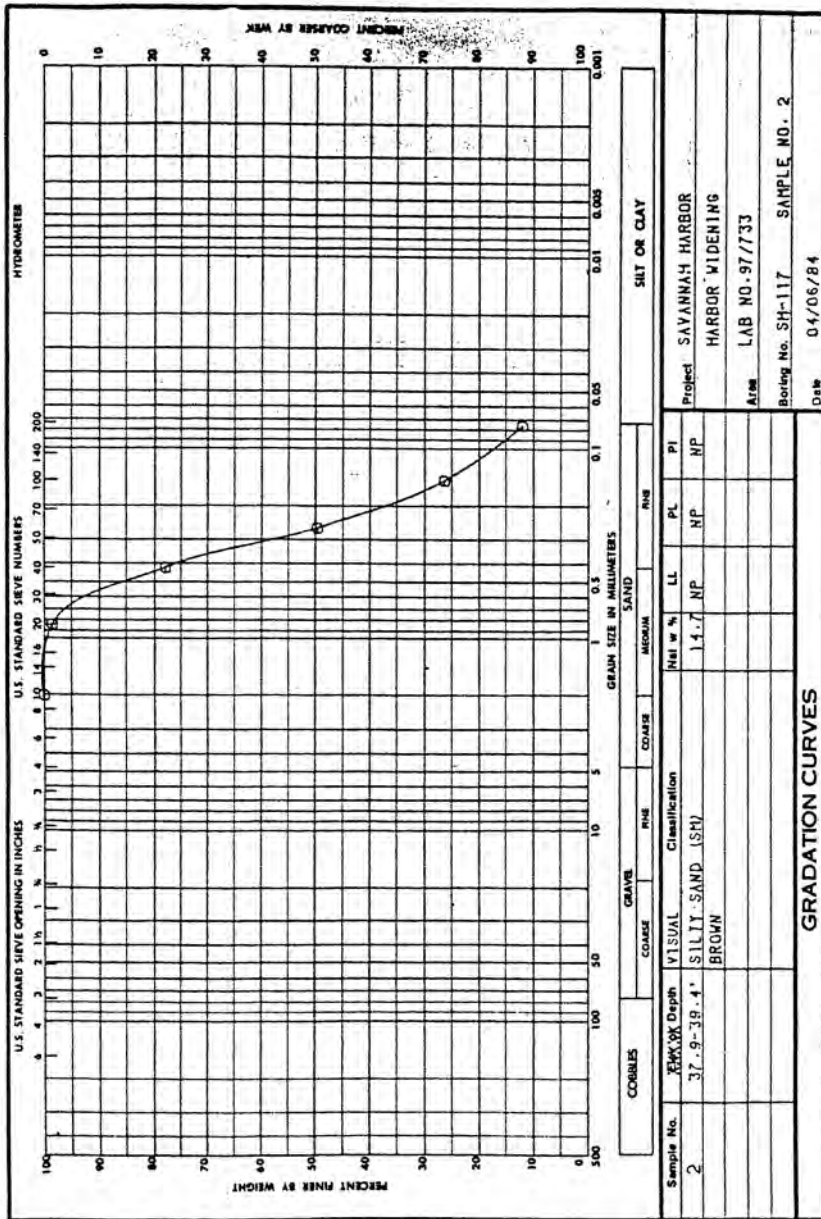
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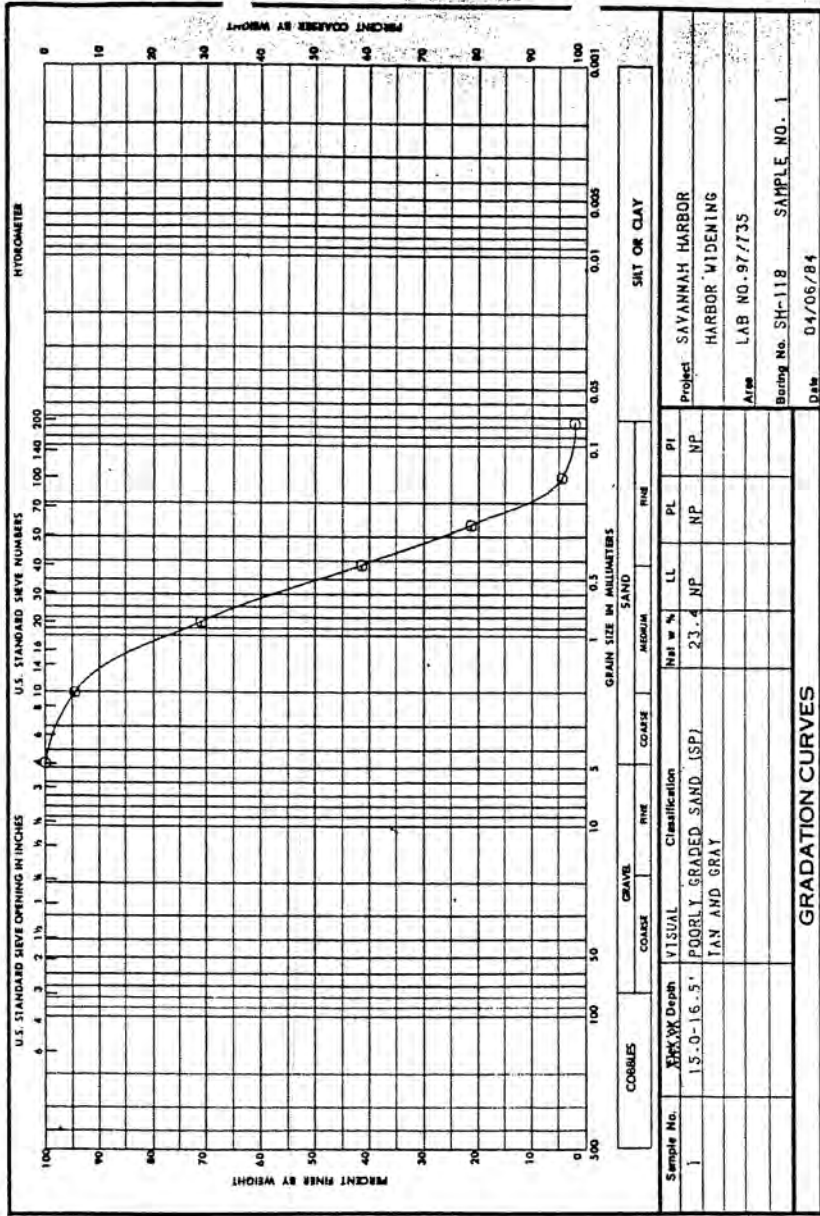


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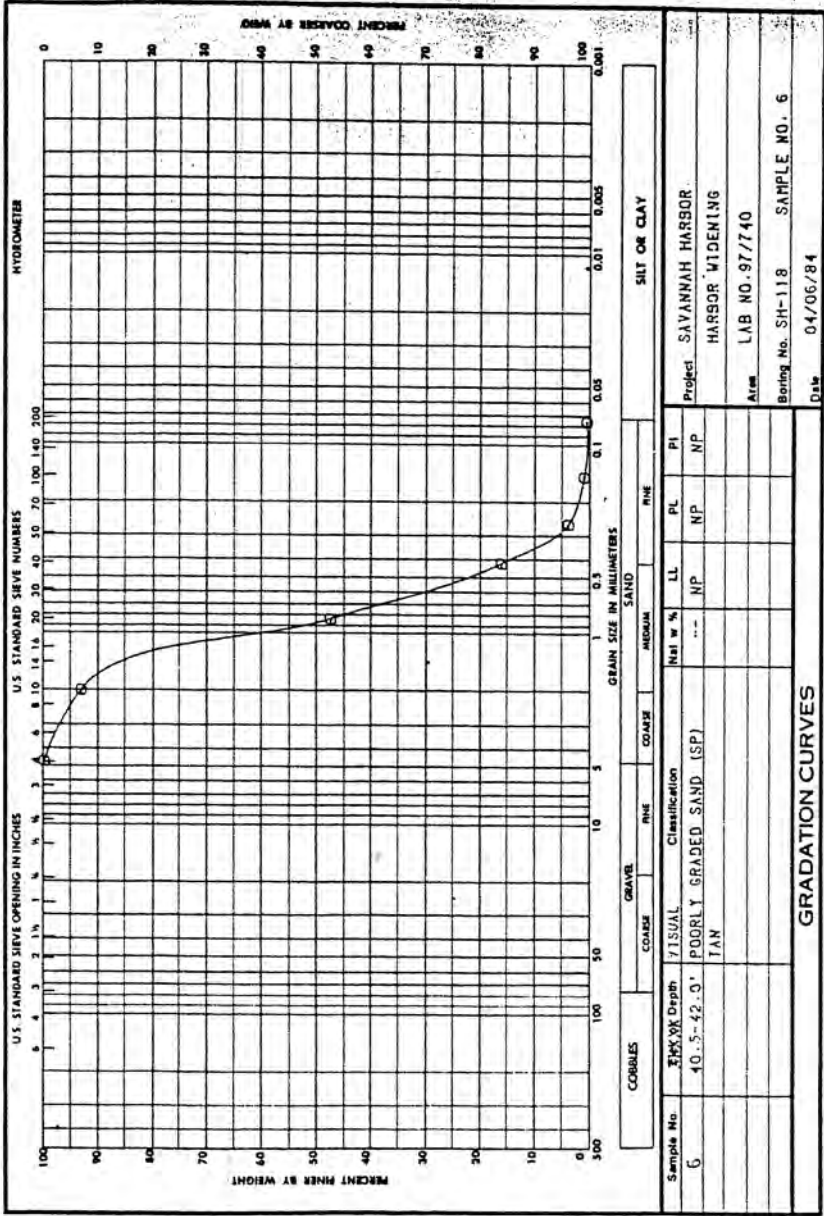
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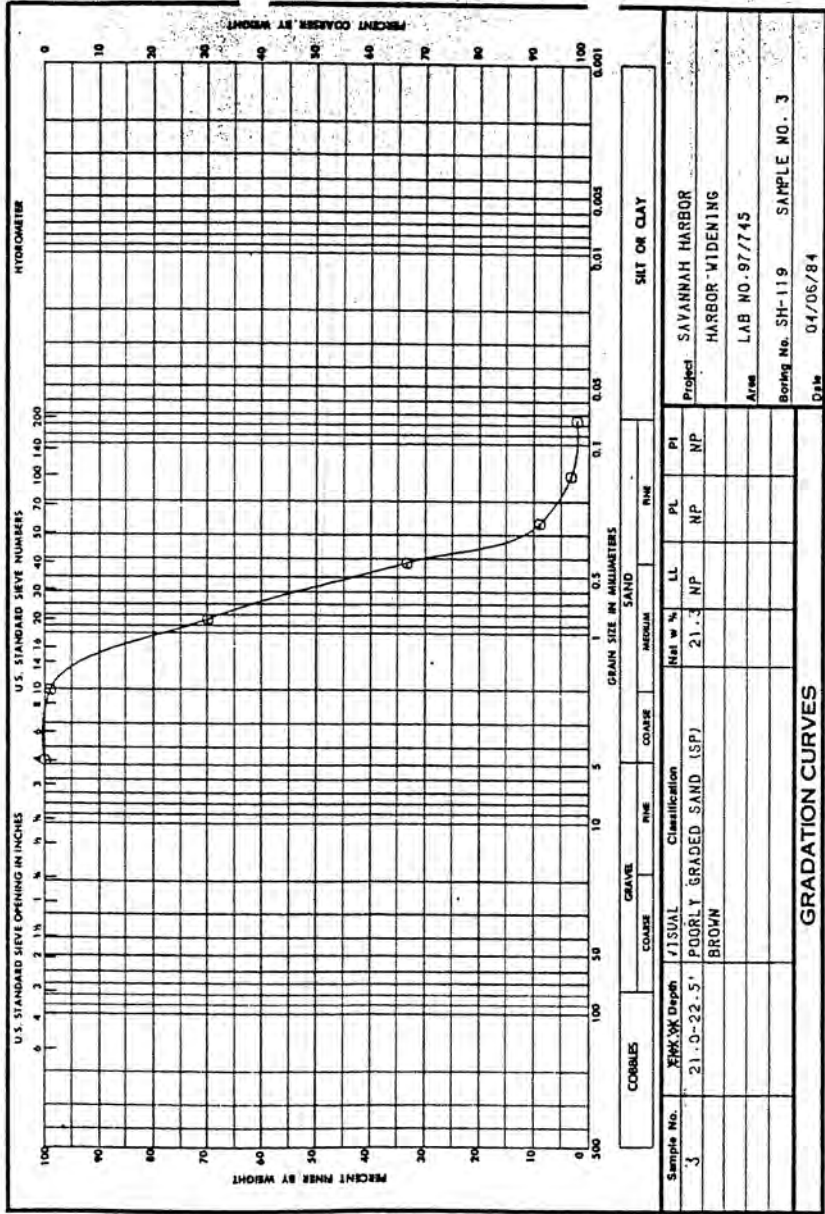


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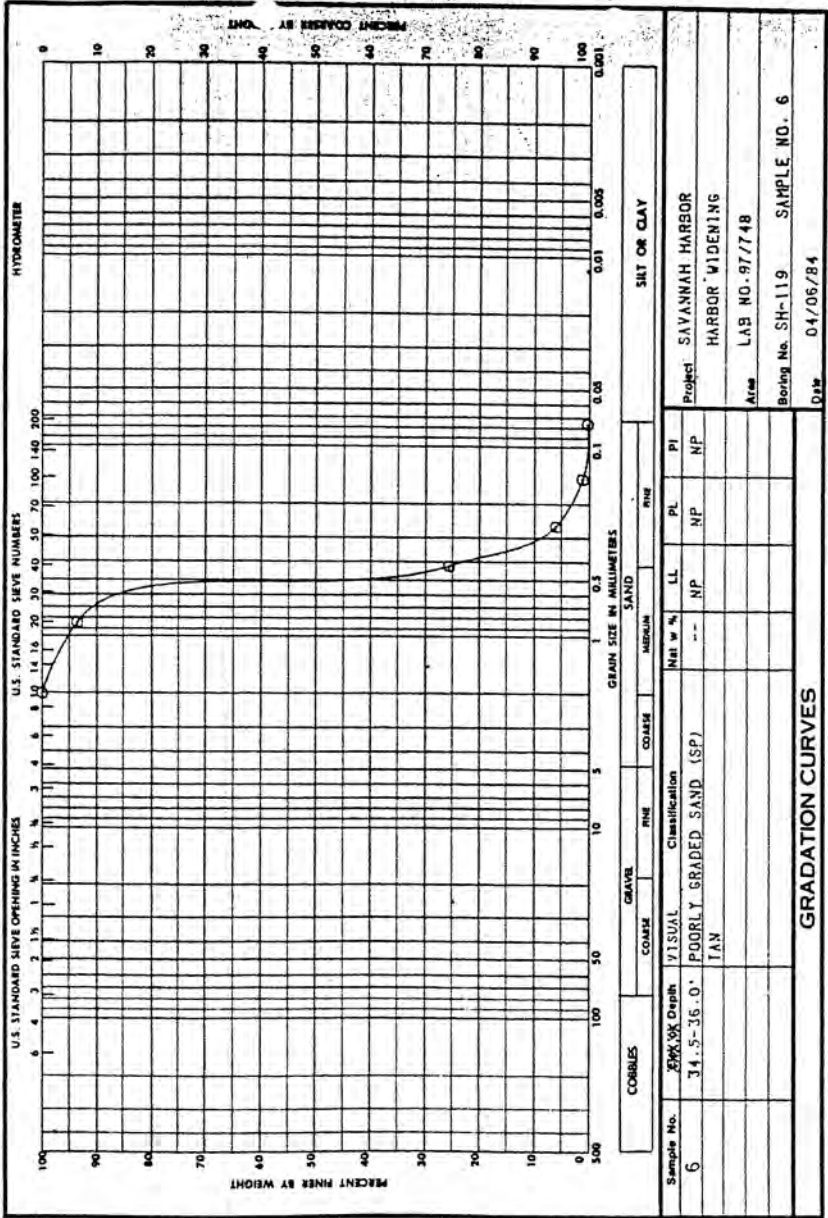


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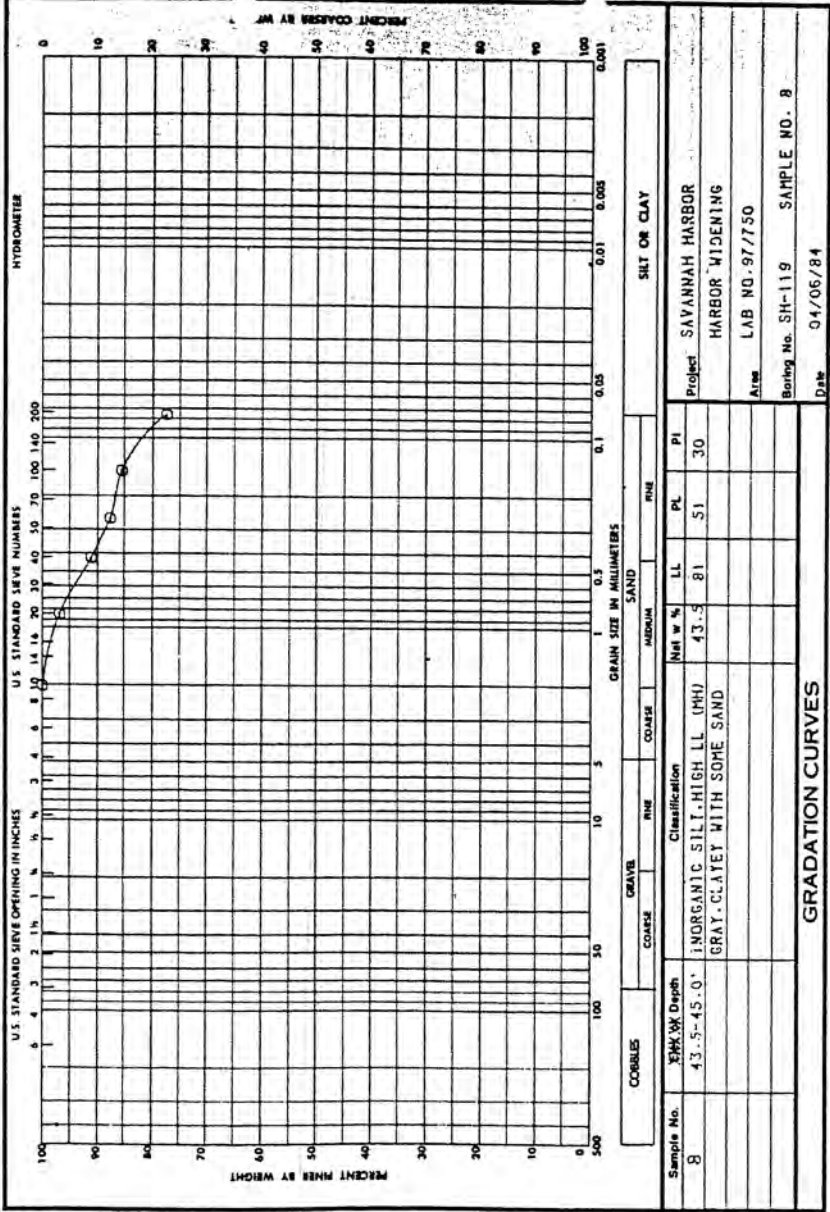


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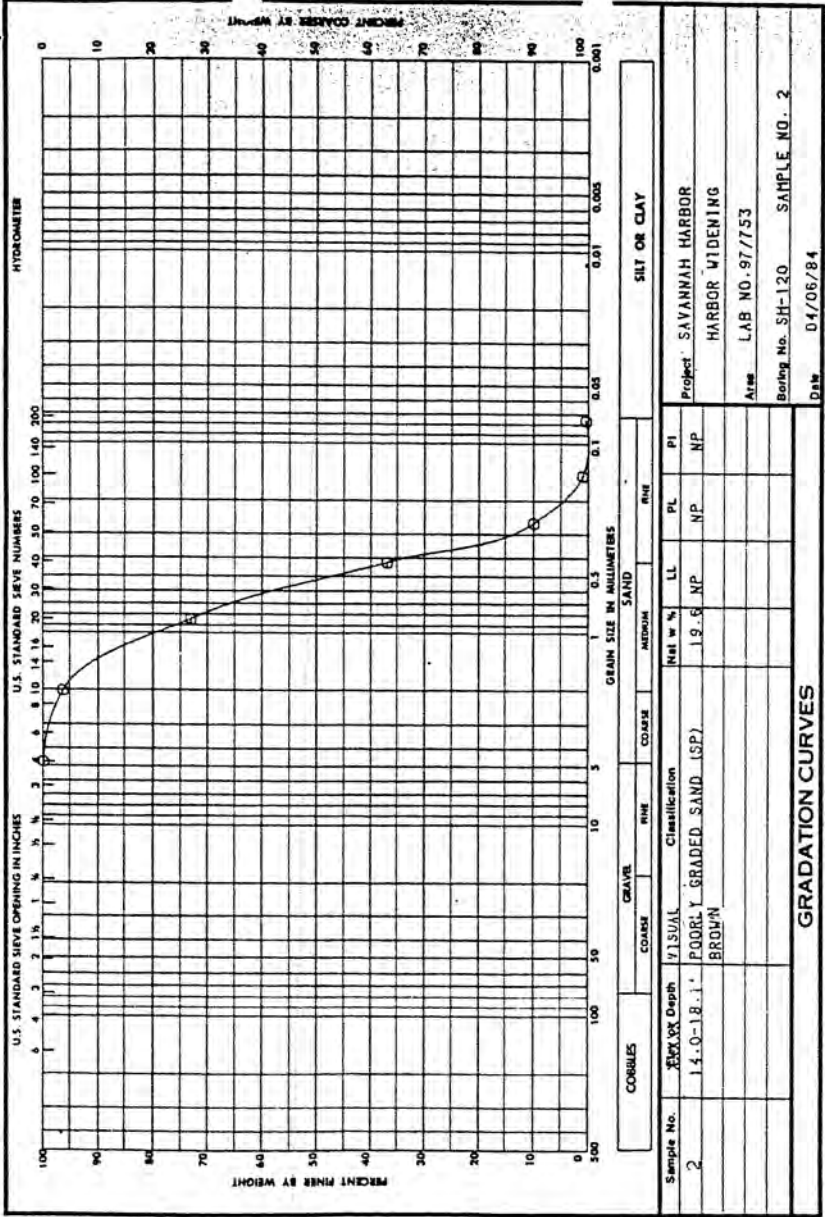
| <b>GENERAL TEST REPORT</b><br><b>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC</b><br><b>CORPS OF ENGINEERS</b><br><b>MARIETTA, GEORGIA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |            |                                  | <b>DISTRICT/OFFICE</b><br>Savannah<br><b>CONTRACT NO.</b><br>--           |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|----------------------------------|---------------------------------------------------------------------------|-----------------------|---------|----------|------------|-------------|--------------------------------------|--------|--------|---|--------------|-----|--------|--------|---|--------------|-----|
| <b>PROJECT</b><br>Savannah Harbor Widening Study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |            |                                  | <b>DATE REPORTED</b><br>21 November 1984<br><b>WORK ORDER NO.</b><br>4246 |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <b>TYPE SAMPLE</b> 3 1/2" diameter cores, dense, fine grained silty sand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |            |                                  | <b>REQN. NO.</b><br>SASEN-CC-85-14                                        |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <b>SOURCE</b><br>Savannah Harbor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |            |                                  | <b>BASE UNIT COST</b><br>--                                               |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <b>FOR USE AS</b><br>Investigational                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |            |                                  | <b>DATE SAMPLE RECEIVED</b><br>24 August 1984                             |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <b>TESTED FOR</b><br>Unconfined Compressive strength                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |            |                                  | <b>LAB NO.</b><br>97/821-822                                              |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input checked="" type="checkbox"/> <b>MEETS SPECIFICATIONS</b> </div> <div style="text-align: center;">n/a</div> <div style="text-align: center;"> <input type="checkbox"/> <b>FAILS SPECIFICATIONS (See below)</b> </div> </div>                                                                                                                                                                                                                                                                                                                                                                       |          |            |                                  |                                                                           |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">LAB NO.</th> <th style="text-align: left; border-bottom: 1px solid black;">HOLE NO.</th> <th style="text-align: left; border-bottom: 1px solid black;">SAMPLE NO.</th> <th style="text-align: left; border-bottom: 1px solid black;">DEPTH, FEET</th> <th style="text-align: left; border-bottom: 1px solid black;">UNCONFINED COMPRESSIVE STRENGTH, psi</th> </tr> </thead> <tbody> <tr> <td>97/821</td> <td>SH-120</td> <td>1</td> <td>47.7 to 48.5</td> <td>125</td> </tr> <tr> <td>97/822</td> <td>SH-120</td> <td>2</td> <td>48.9 to 50.1</td> <td>130</td> </tr> </tbody> </table> |          |            |                                  |                                                                           |                       | LAB NO. | HOLE NO. | SAMPLE NO. | DEPTH, FEET | UNCONFINED COMPRESSIVE STRENGTH, psi | 97/821 | SH-120 | 1 | 47.7 to 48.5 | 125 | 97/822 | SH-120 | 2 | 48.9 to 50.1 | 130 |
| LAB NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | HOLE NO. | SAMPLE NO. | DEPTH, FEET                      | UNCONFINED COMPRESSIVE STRENGTH, psi                                      |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| 97/821                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SH-120   | 1          | 47.7 to 48.5                     | 125                                                                       |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| 97/822                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SH-120   | 2          | 48.9 to 50.1                     | 130                                                                       |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <b>REMARKS:</b><br>Samples were tested in a wet condition as received.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |            |                                  |                                                                           |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
| <b>REPORTED BY</b> <input type="checkbox"/> PHONE <input type="checkbox"/> WIRE<br><b>DATE</b> n/a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |            | <b>TESTED BY</b><br>HLM          |                                                                           | <b>CHECKED BY</b> DRH |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |            | <b>SAMPLED BY</b><br>T. Zielouka |                                                                           |                       |         |          |            |             |                                      |        |        |   |              |     |        |        |   |              |     |



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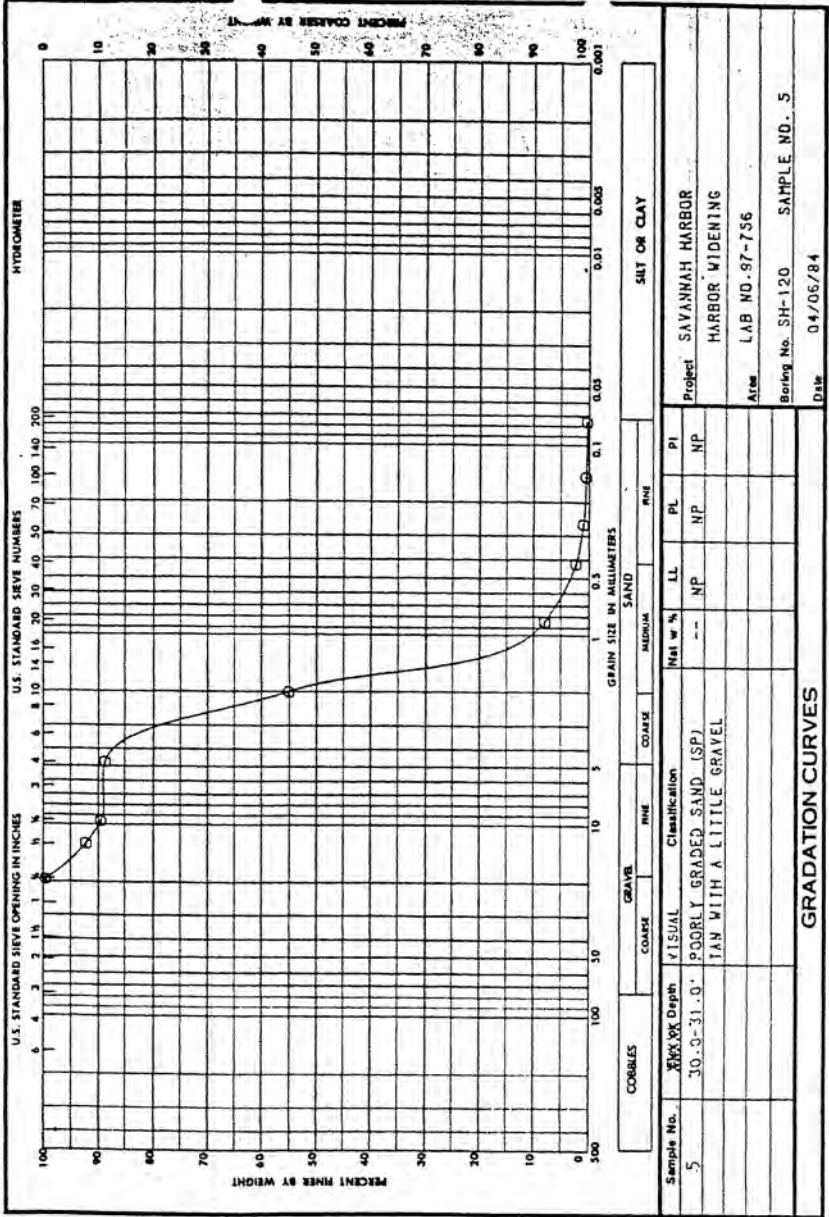
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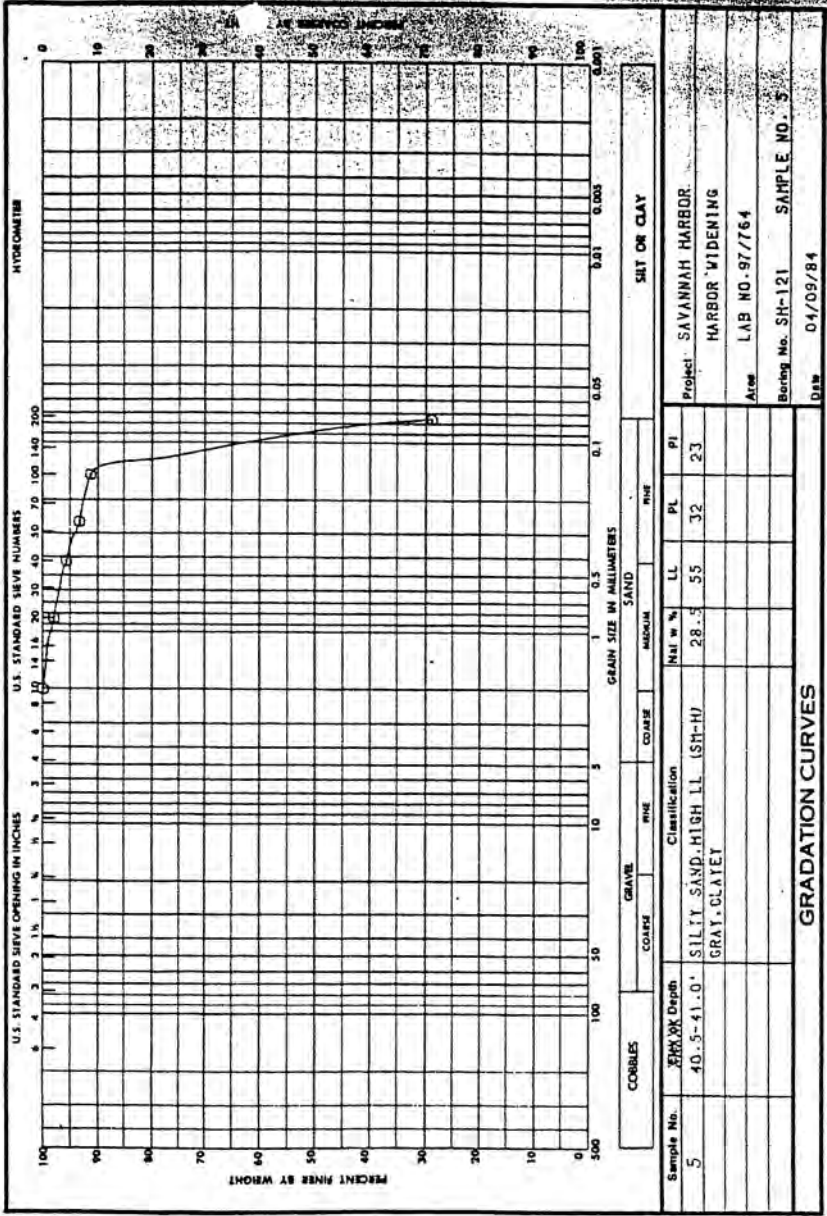




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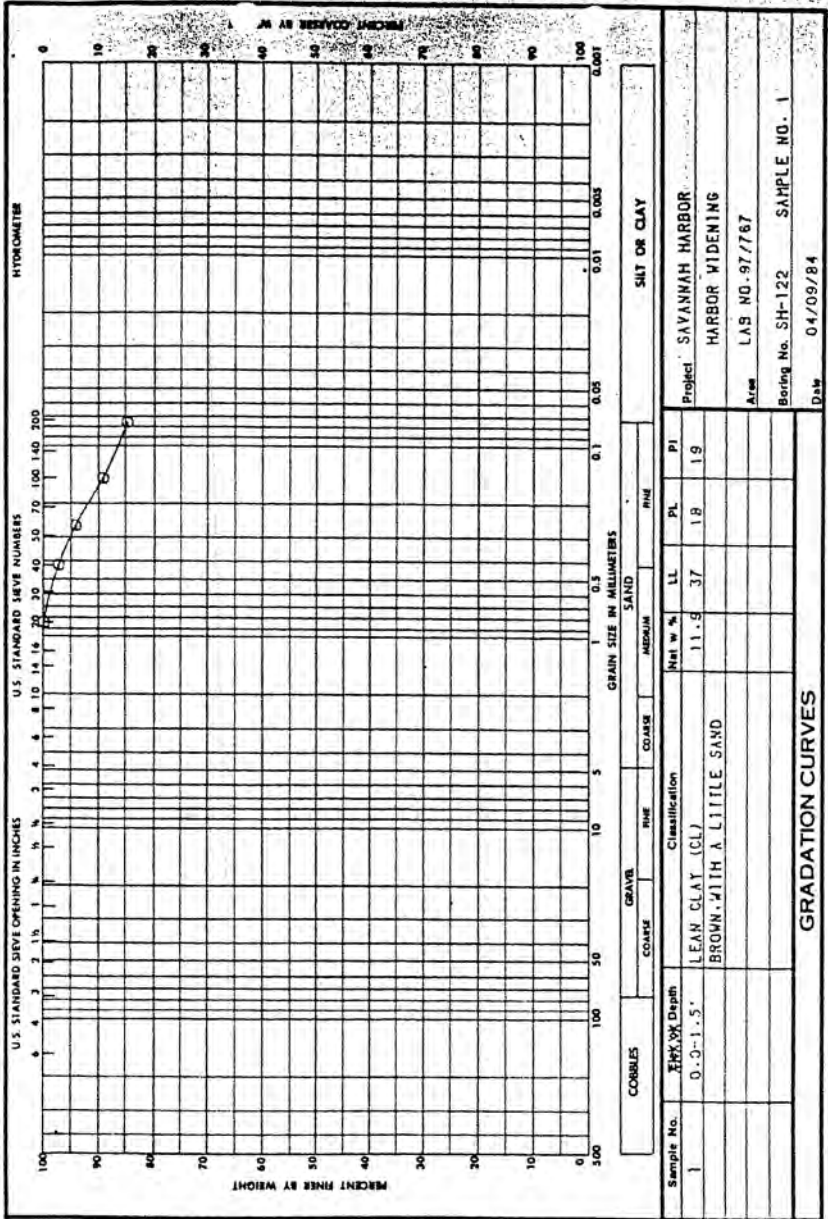


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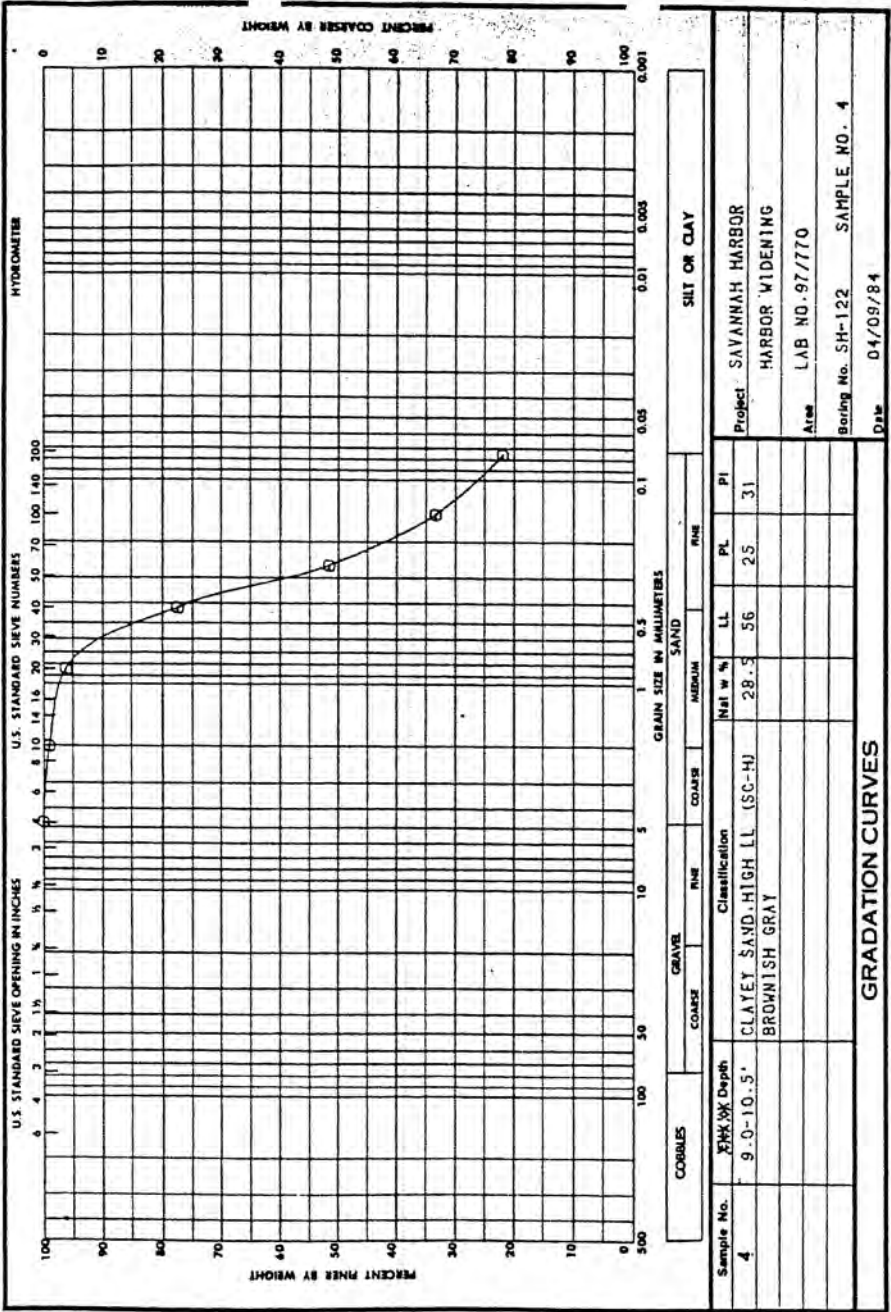
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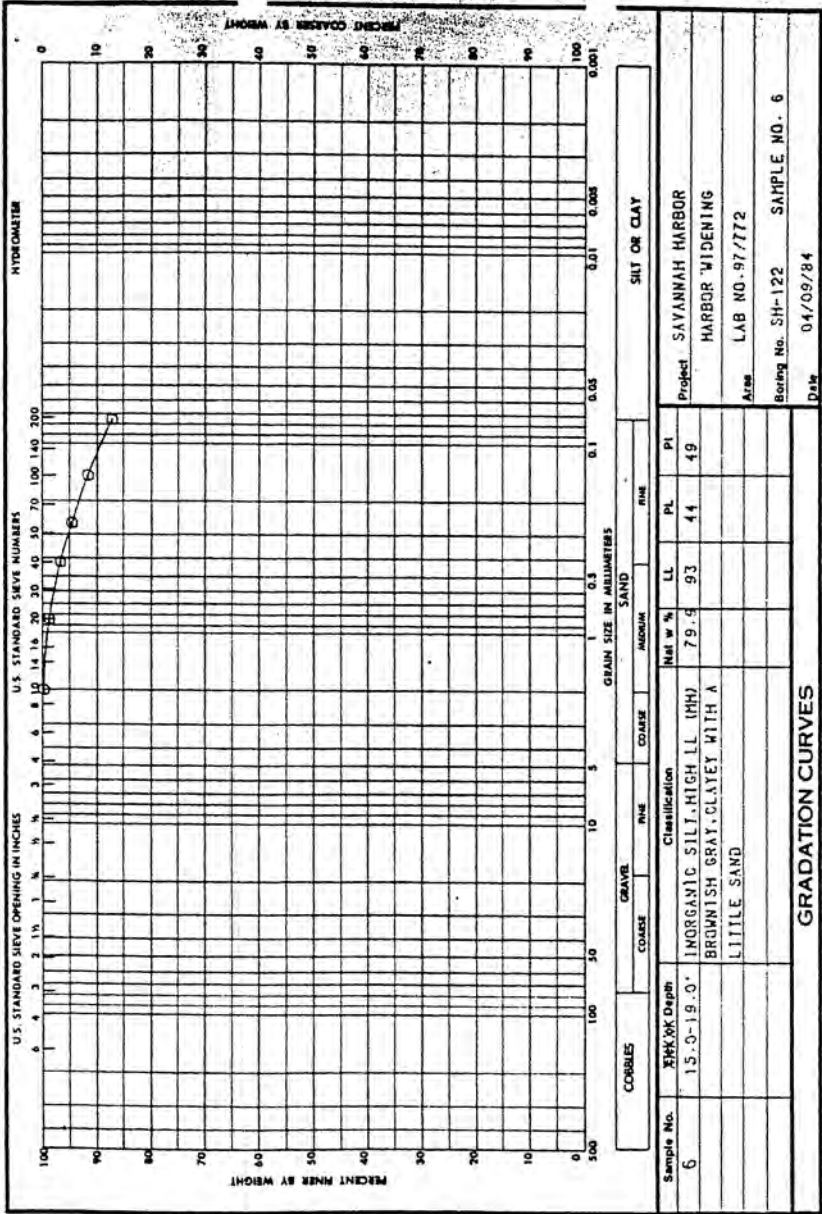
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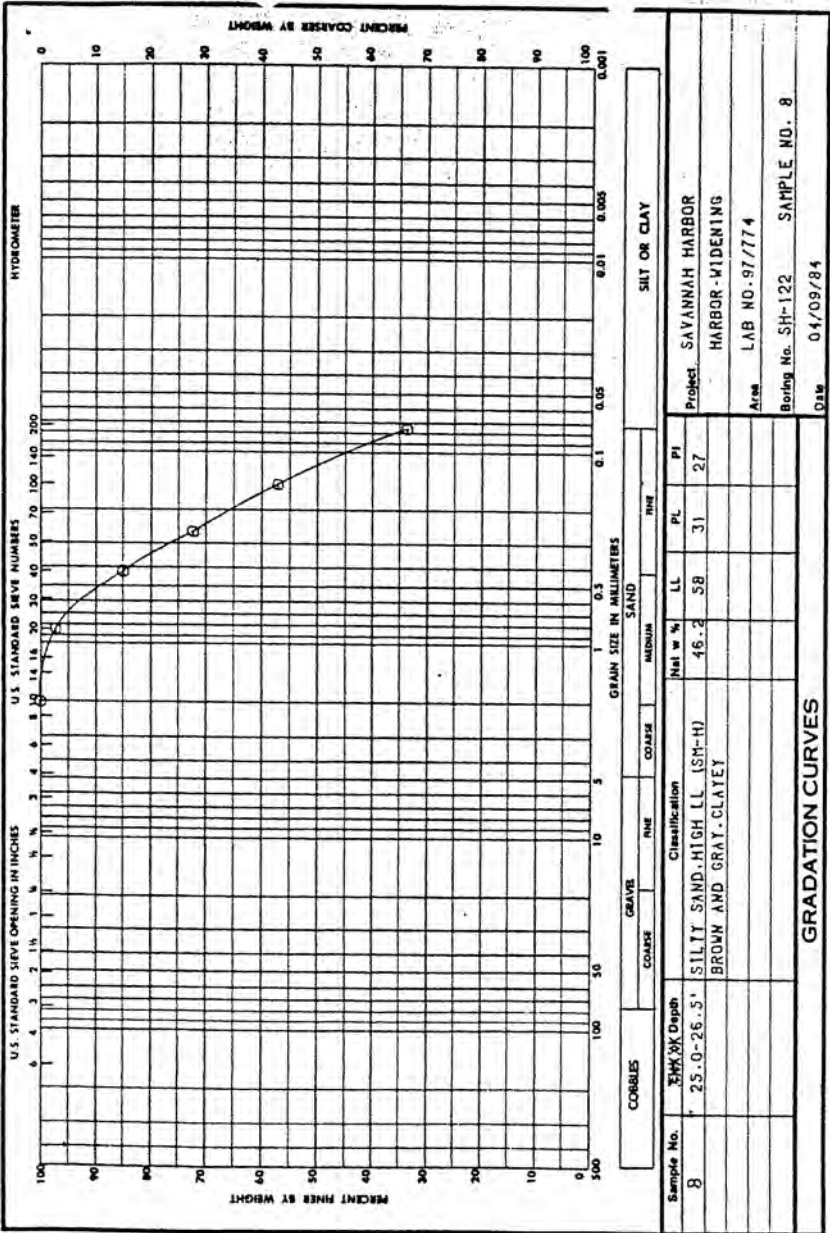




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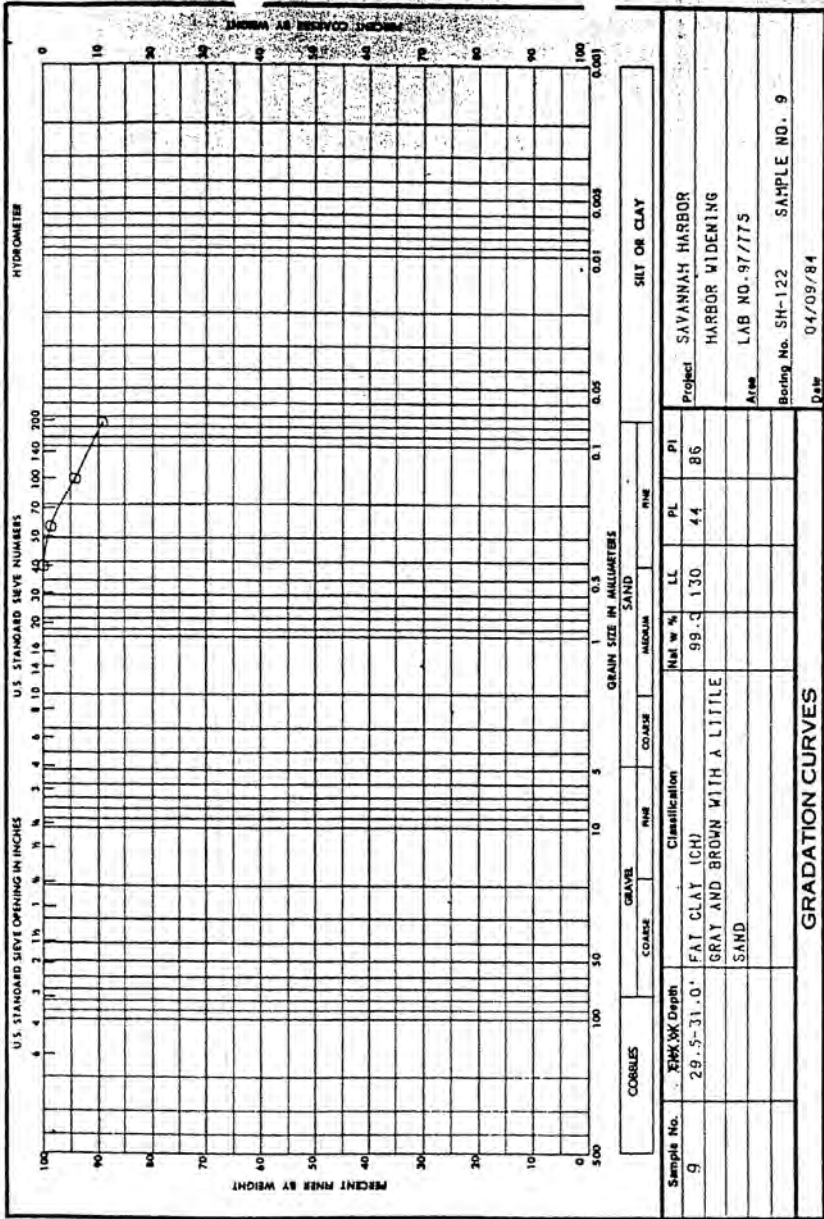


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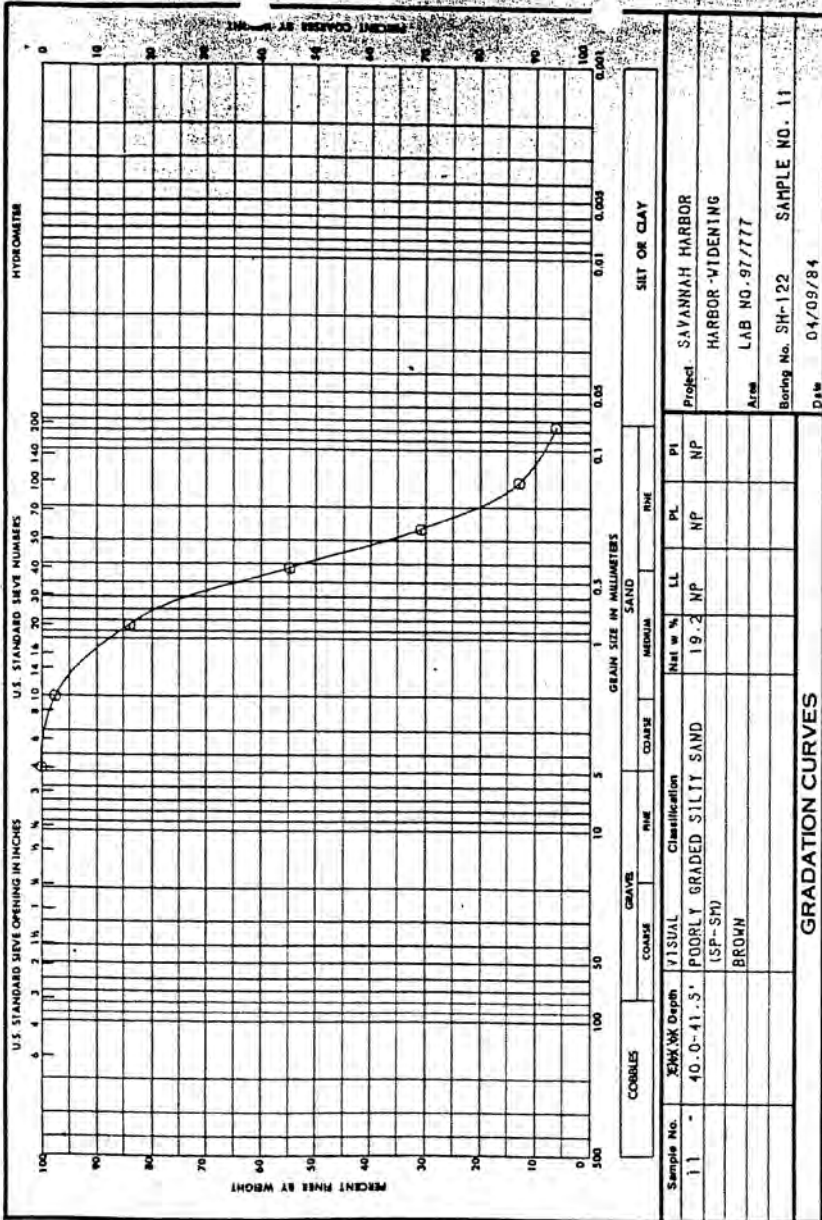


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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

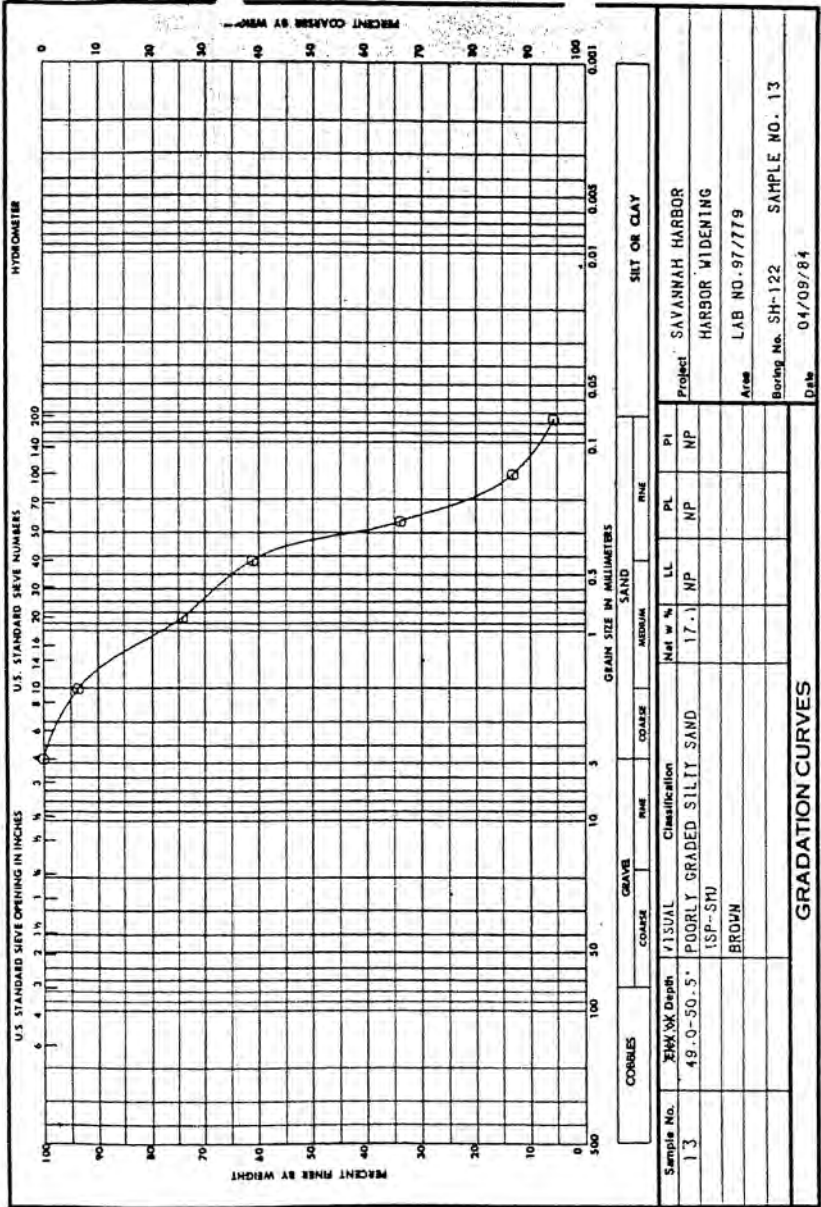
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 83

W.O. No. 3778  
Reg No. EN-GS-84-03

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

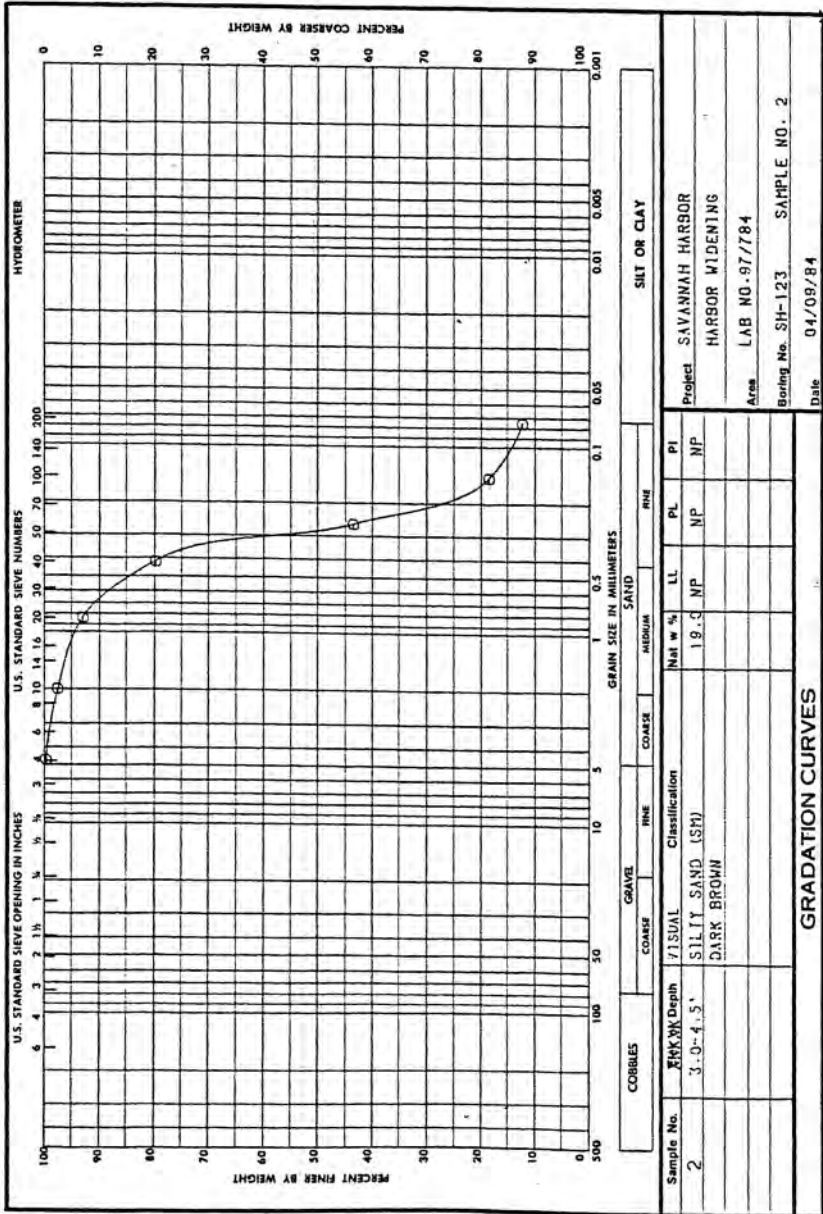


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

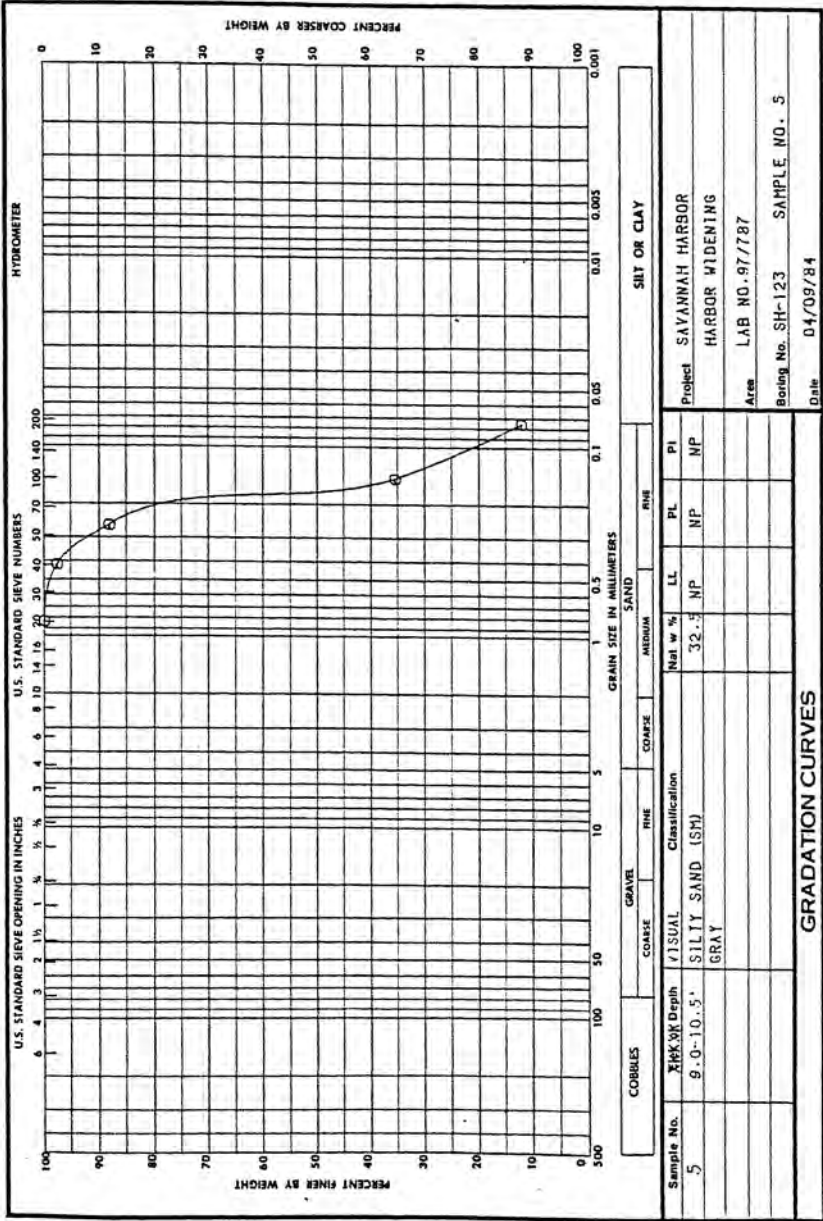


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

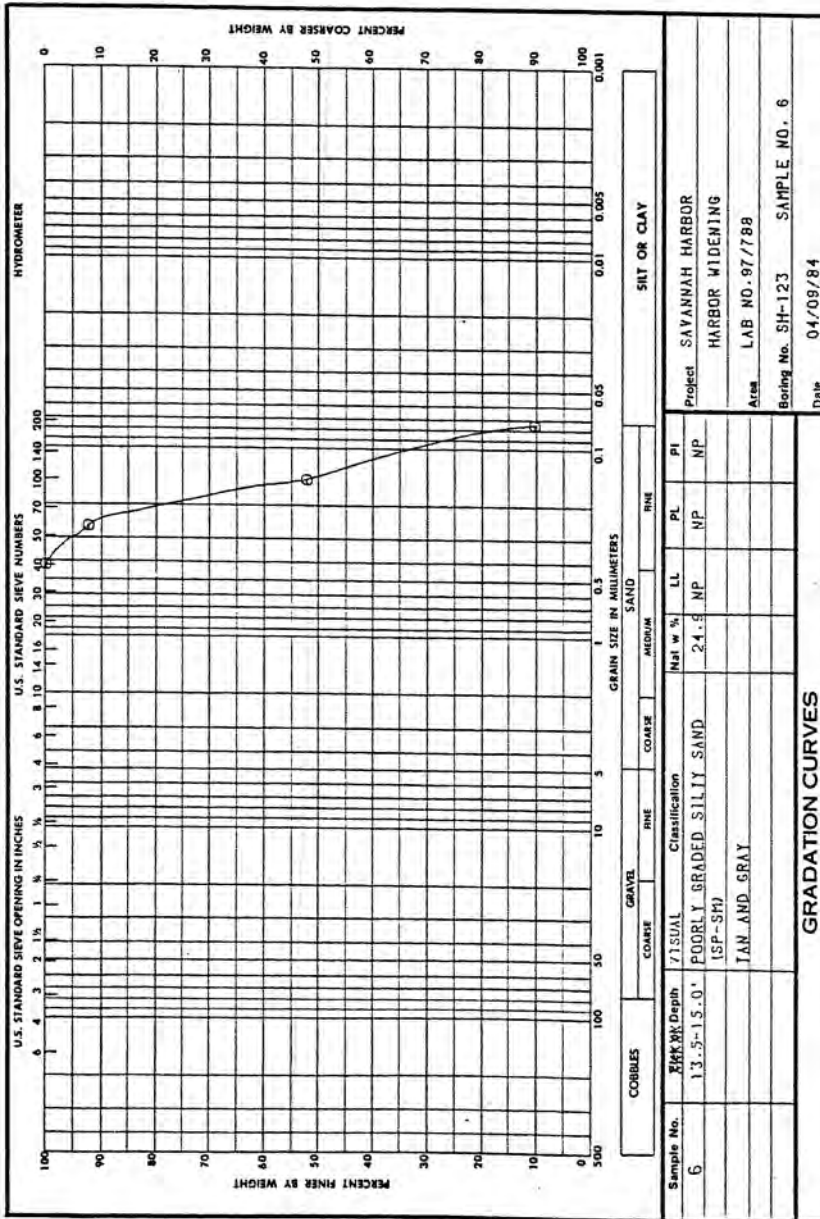
Req. No. EN-GS-84-03



ENG FORM 2087  
MAY 74

W.O. No. 3778  
 Req. No. EN-GS-84-03

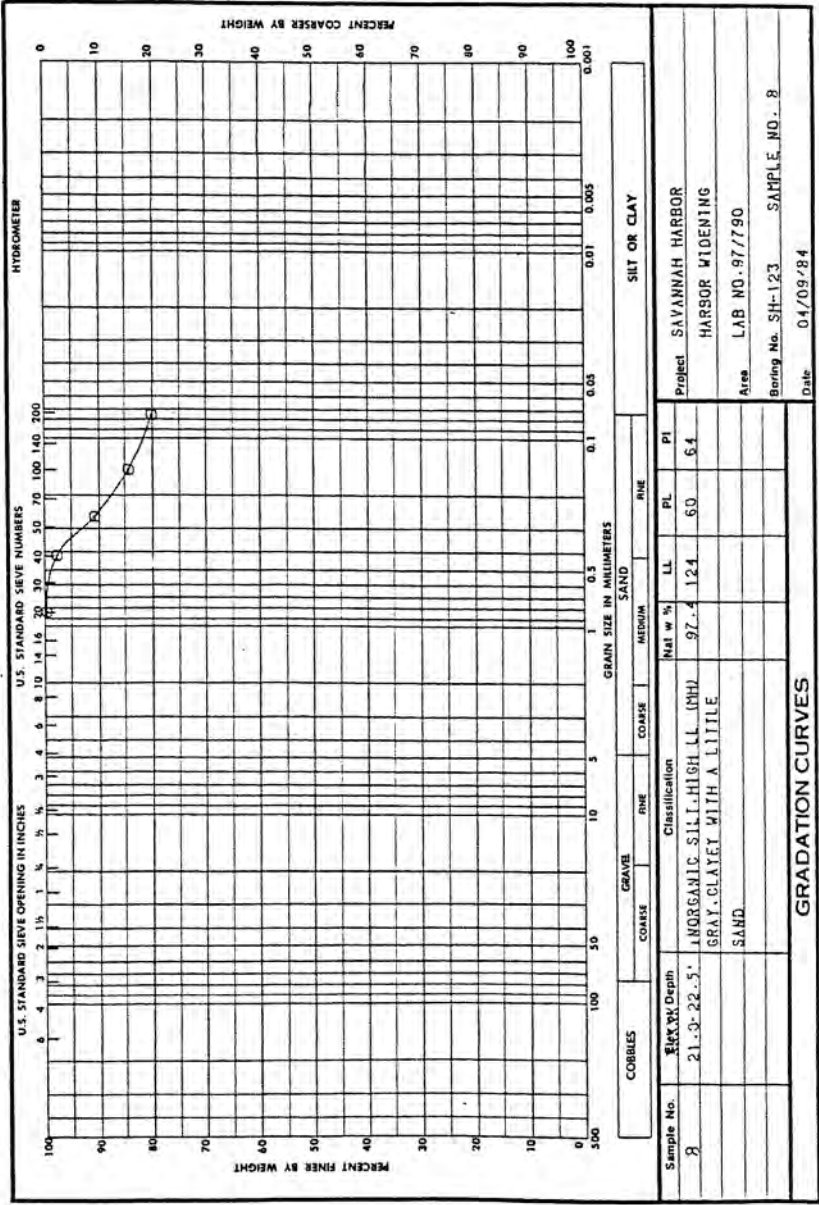
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





W.O. No. 3778  
Req. No. EN-GS-84-03

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

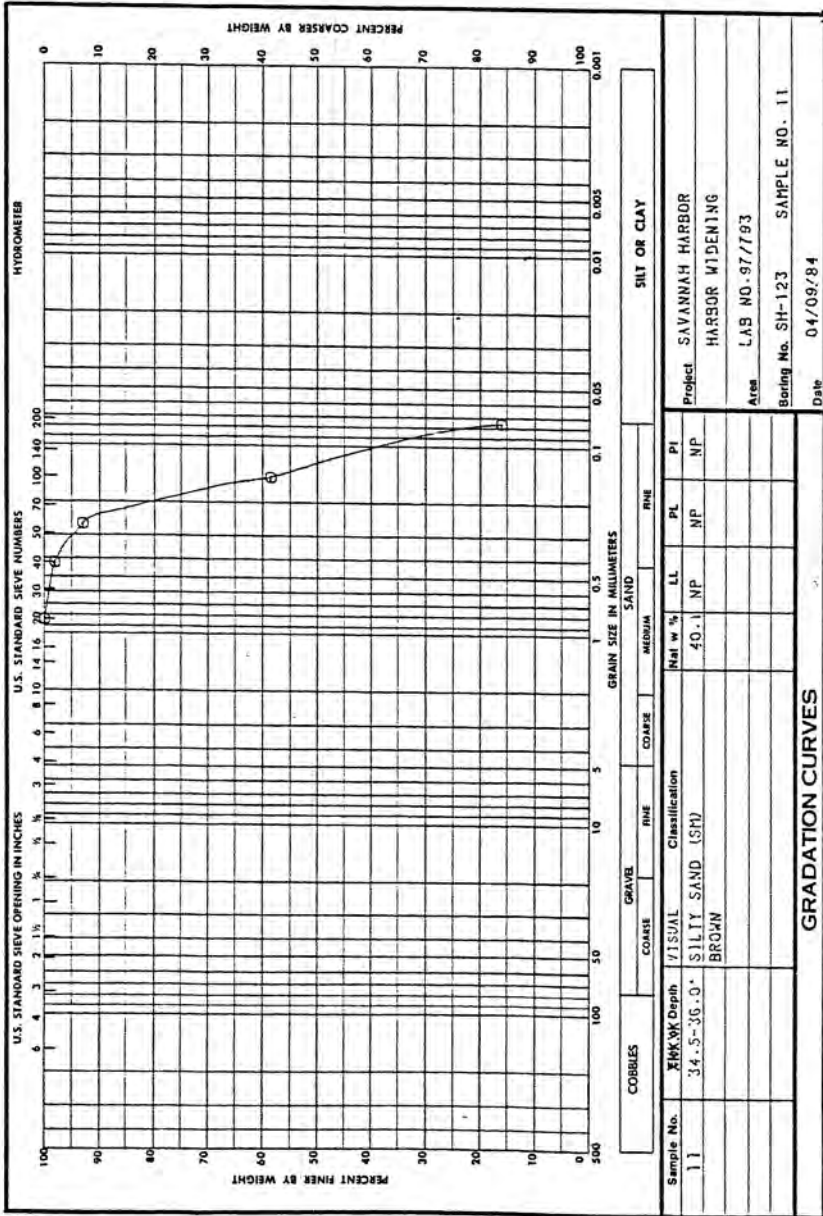




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

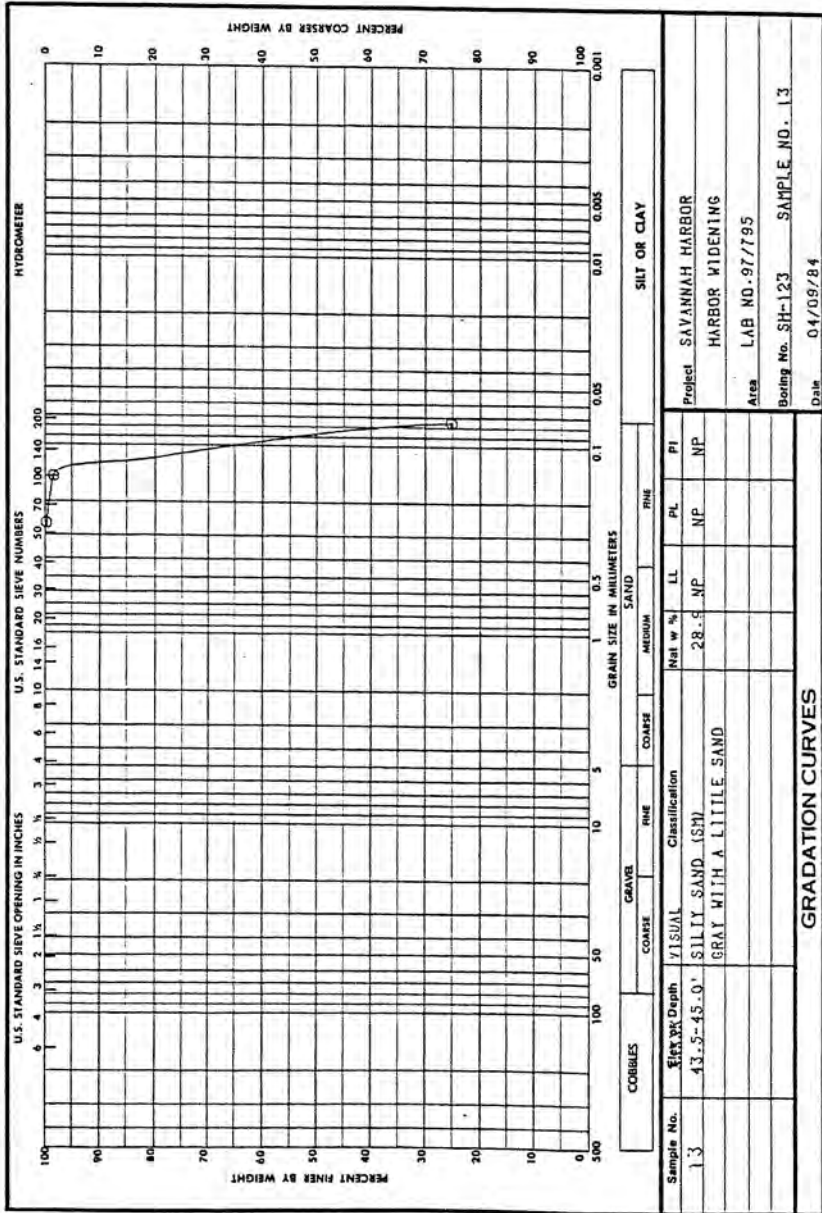


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

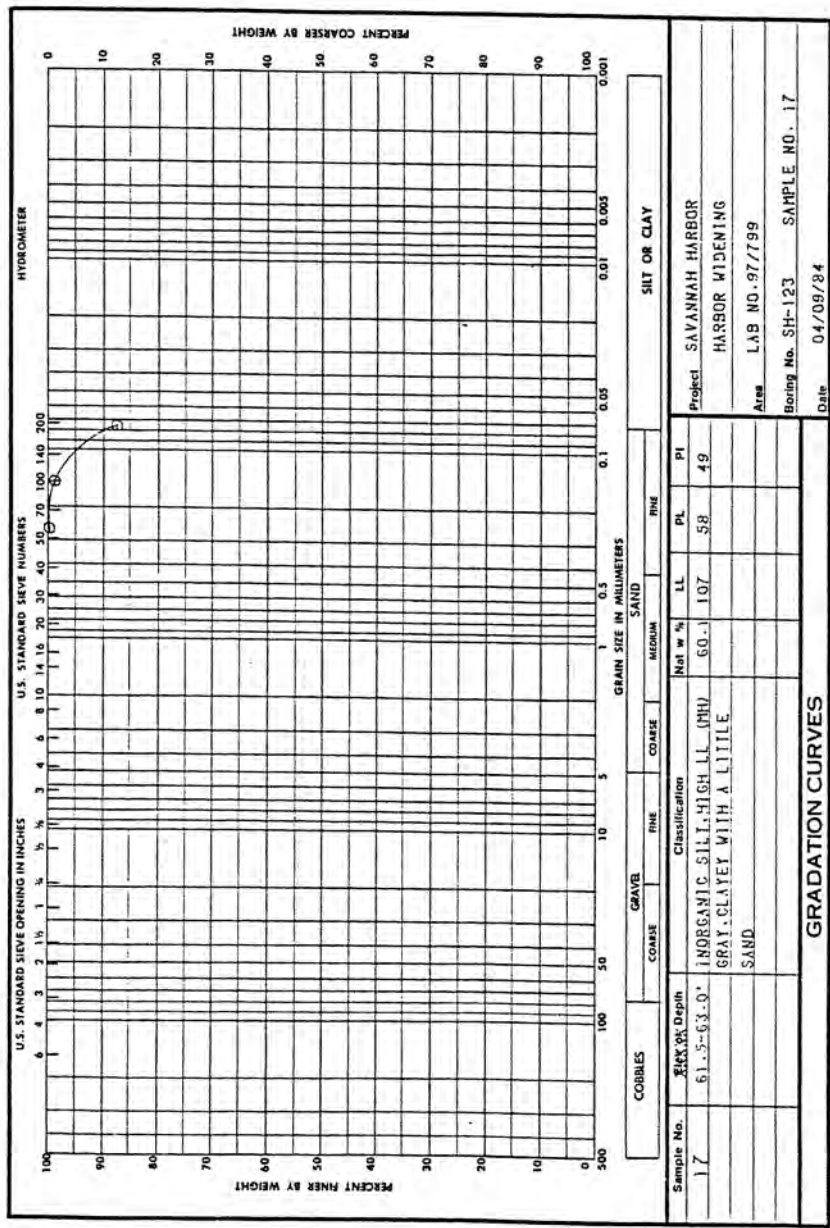
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Req. No. EN-GS-84-03



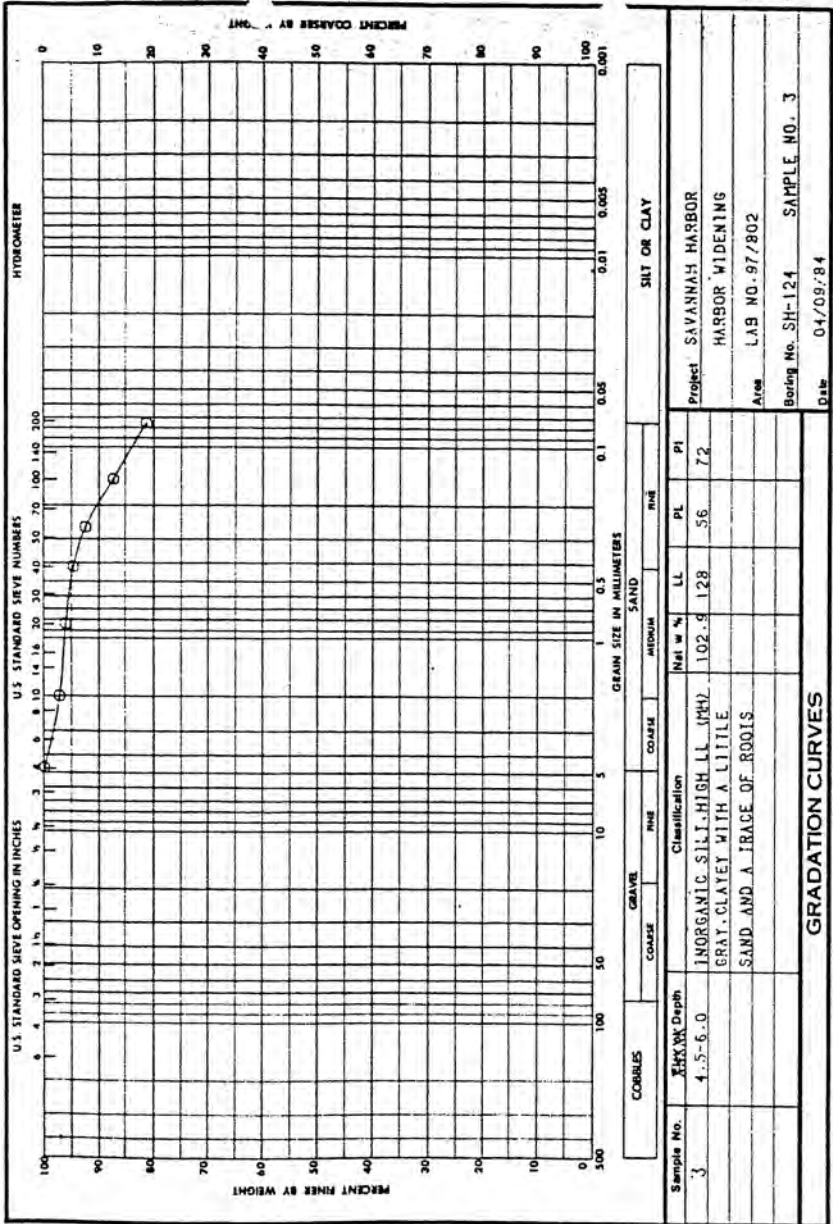
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778  
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63

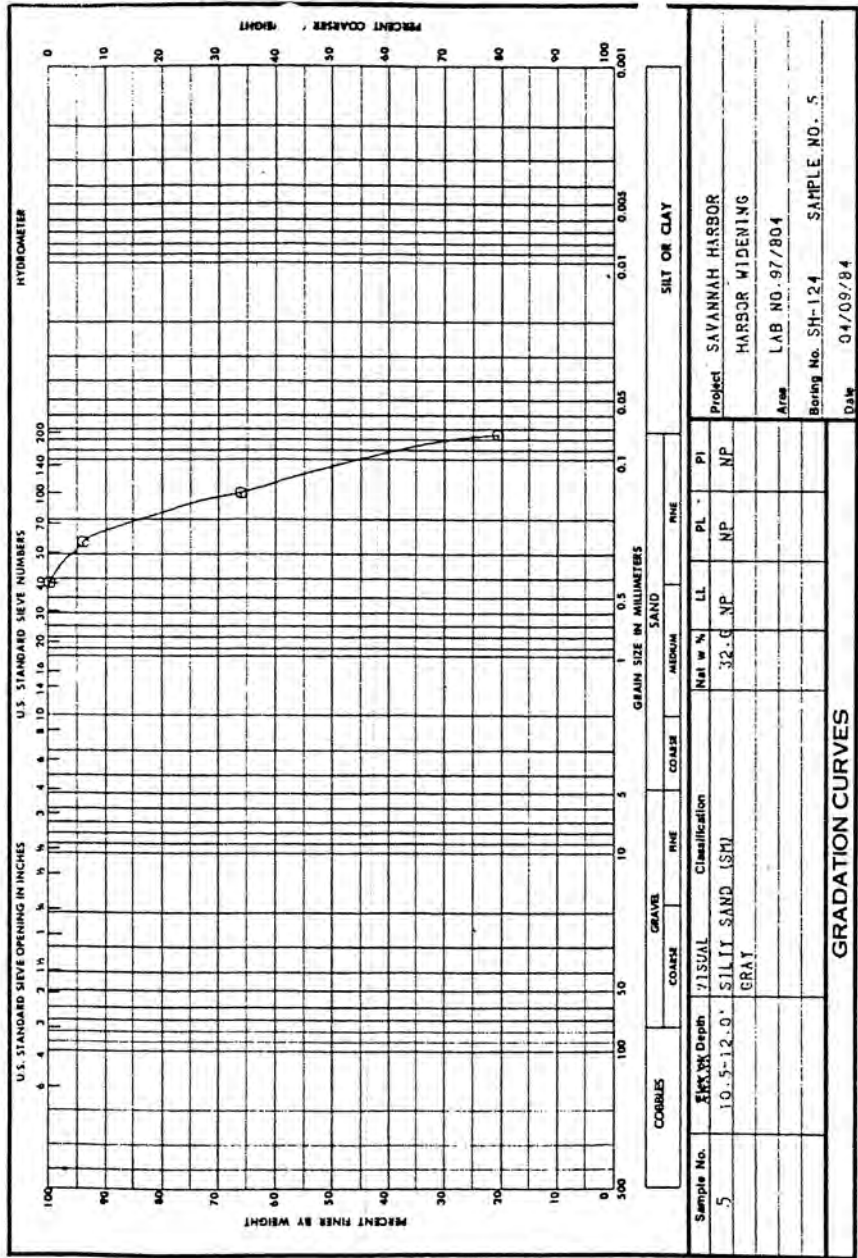
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ENG FORM 2087  
1 MAY 63

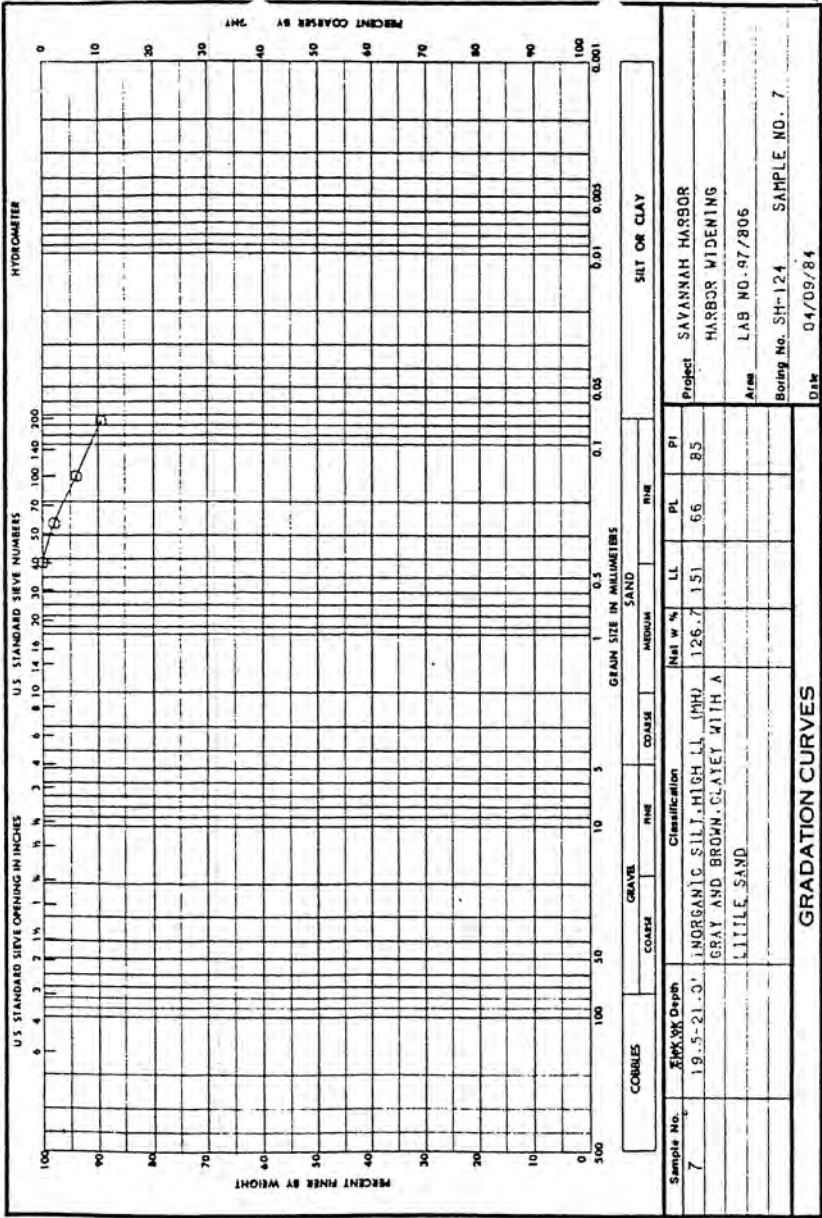
Req No EN-65-84-03

WORLD OF ENGINEERS, 611 SOUTH COBB DRIVE, MAHALLA, GA. 30060



W. J. H. 3/78  
Req No. EN-65-84-03

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

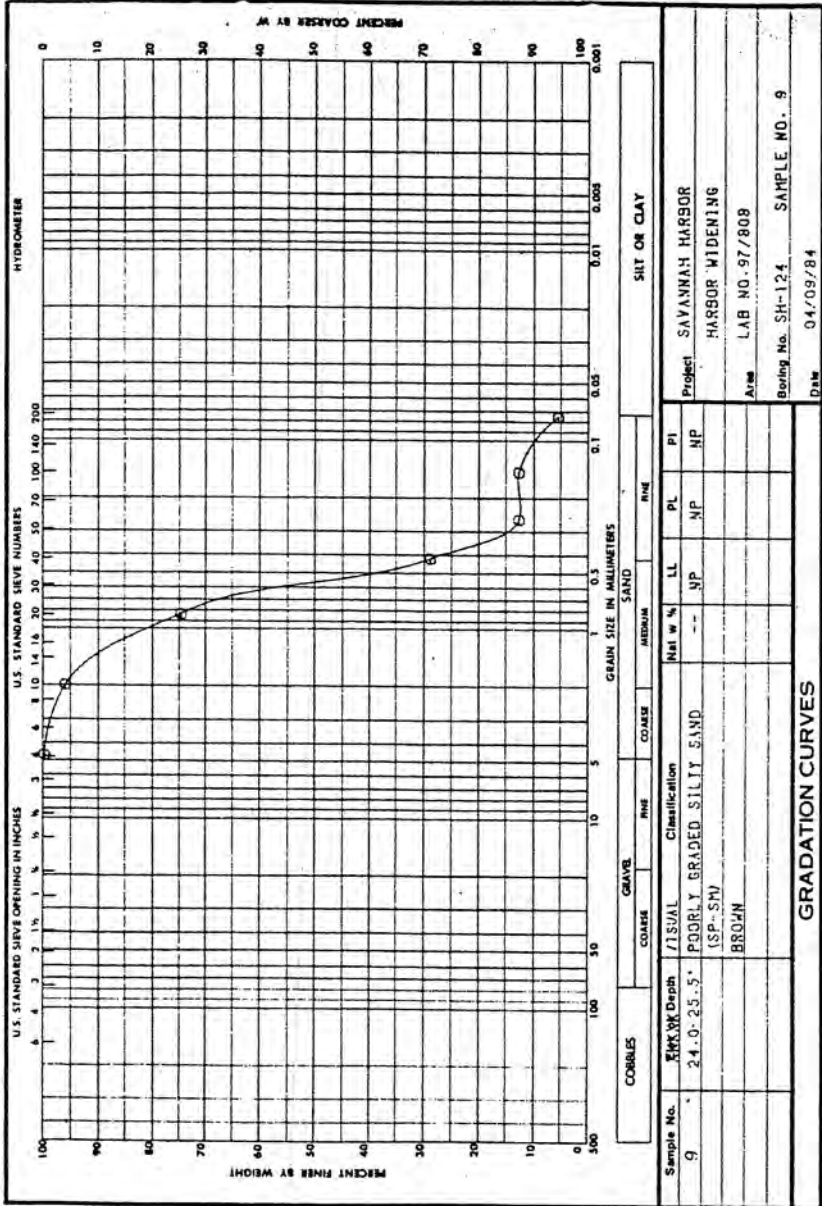


ENG FORM 2087  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

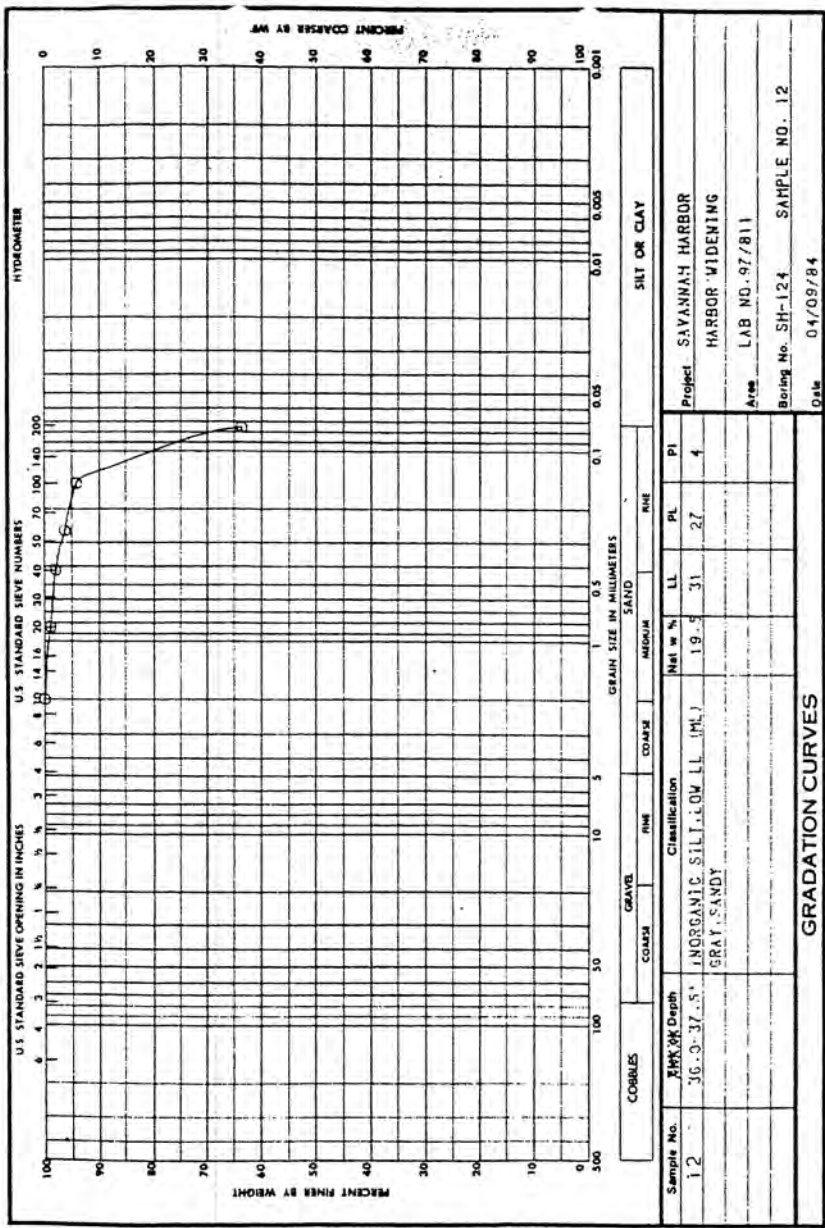


ENG FORM  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778  
Req. No. EN-6S-84-03

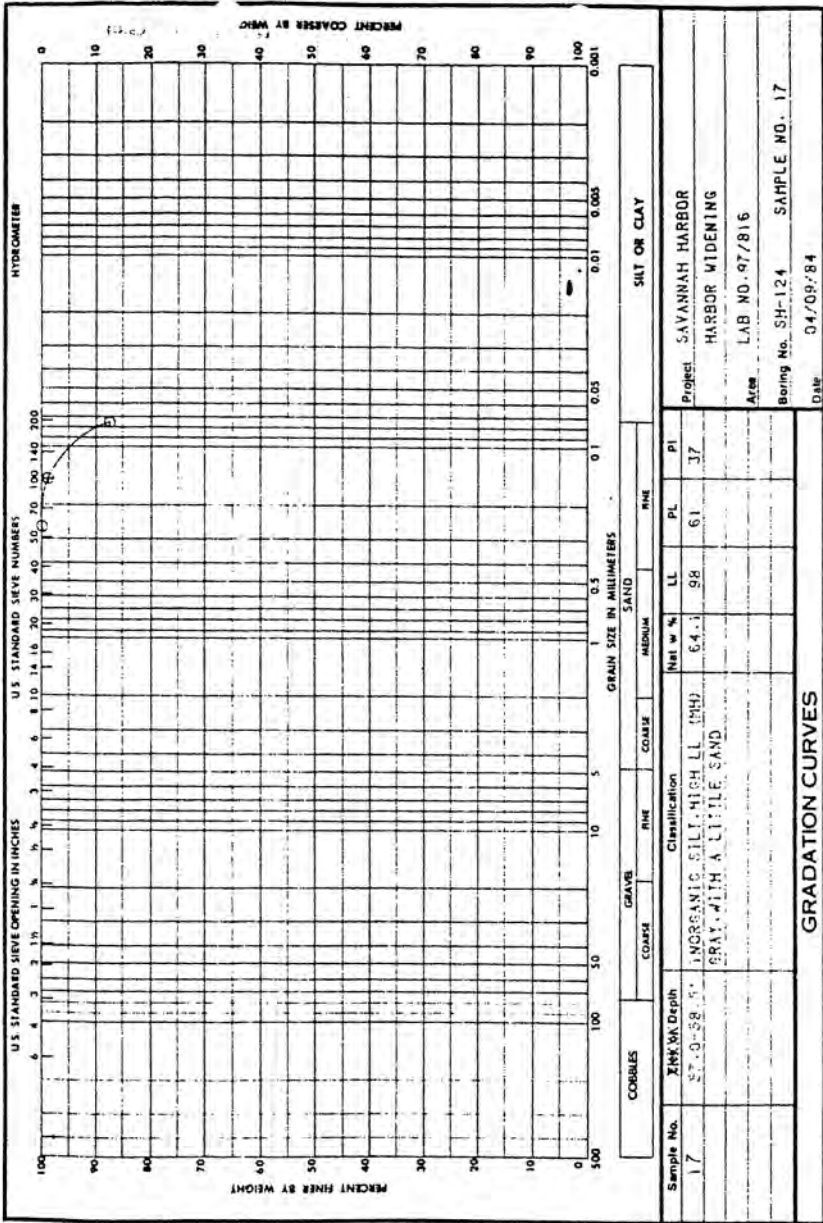




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63

|                                                                                                                                 |          |                                                           |            |                      |
|---------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------|------------|----------------------|
| <b>GENERAL TEST REPORT</b><br>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC<br>CORPS OF ENGINEERS<br>MARIETTA, GEORGIA |          | DISTRICT/OFFICE<br>Savannah                               |            |                      |
| PROJECT<br>Savannah Harbor<br>Savannah Harbor Widening                                                                          |          | CONTRACT NO.<br>--                                        |            |                      |
|                                                                                                                                 |          | DATE REPORTED<br>9 June 1987                              |            |                      |
| TYPE SAMPLE<br>Jar Samples of Disturbed Soil                                                                                    |          | WORK ORDER NO.<br>5193                                    |            |                      |
|                                                                                                                                 |          | REQD. NO.<br>SAS-FN-GS-87-23                              |            |                      |
| HOLE NO. SH-130, 132, 133, 134, 135, 136, 138, 139, 137,<br>143, 144, and 148                                                   |          | BASE UNIT COST<br>--                                      |            |                      |
| FOR USE AS<br>Investigation                                                                                                     |          | DATE SAMPLE RECEIVED<br>27 Feb - 16 March 1987            |            |                      |
| TESTED FOR<br>Moisture Content                                                                                                  |          | LAB NO.<br>See below                                      |            |                      |
| <input checked="" type="checkbox"/> MEETS SPECIFICATIONS N/A                                                                    |          | <input type="checkbox"/> FAILS SPECIFICATIONS (See below) |            |                      |
| Lab No.                                                                                                                         | Hole No. | Sample No.                                                | Depth (ft) | Moisture Content (%) |
| 977                                                                                                                             |          |                                                           |            |                      |
| 1139                                                                                                                            | SH-130   | 3                                                         | 4.5-6.0    | 45.8                 |
| 1141                                                                                                                            | "        | 5                                                         | 10.5-12.0  | 93.0                 |
| 1118                                                                                                                            | SH-132   | 4                                                         | 13.5-15.0  | 16.6                 |
| 1135                                                                                                                            | "        | 21                                                        | 66.0-67.5  | 58.7                 |
| 1158                                                                                                                            | SH-133   | 6                                                         | 12.0-13.5  | 43.0                 |
| 1161                                                                                                                            | "        | 9                                                         | 16.5-18.0  | 65.4                 |
| 1180                                                                                                                            | SH-134   | 6                                                         | 12.0-13.5  | 112.0                |
| 1197                                                                                                                            | SH-135   | 4                                                         | 13.5-15.0  | 78.6                 |
| 1200                                                                                                                            | "        | 7                                                         | 27.0-28.5  | 107.2                |
| 1216                                                                                                                            | SH-136   | 5                                                         | 12.0-13.5  | 78.5                 |
| 1219                                                                                                                            | "        | 8                                                         | 21.0-22.5  | 86.1                 |
| 957                                                                                                                             | SH-137   | 9                                                         | 24.0-25.5  | 118.6                |
| 966                                                                                                                             | "        | 18                                                        | 58.5-60.0  | 60.0                 |
| 968                                                                                                                             | SH-138   | 2                                                         | 3.0-3.5    | 21.3                 |
| 970                                                                                                                             | "        | 4                                                         | 7.5-9.0    | 19.9                 |
| 971                                                                                                                             | "        | 5                                                         | 12.0-13.5  | 117.3                |
| REMARKS:<br>NOTE: See test results for all other samples on enclosed ENG Forms 2087.                                            |          |                                                           |            |                      |
| REPORTED BY<br>DATE _____                                                                                                       |          | TESTED BY<br>WB, JL, ES<br>SAMPLED BY<br>District         |            | CHECKED BY<br>ES     |

## GENERAL TEST REPORT (Continued)

(SOILS)

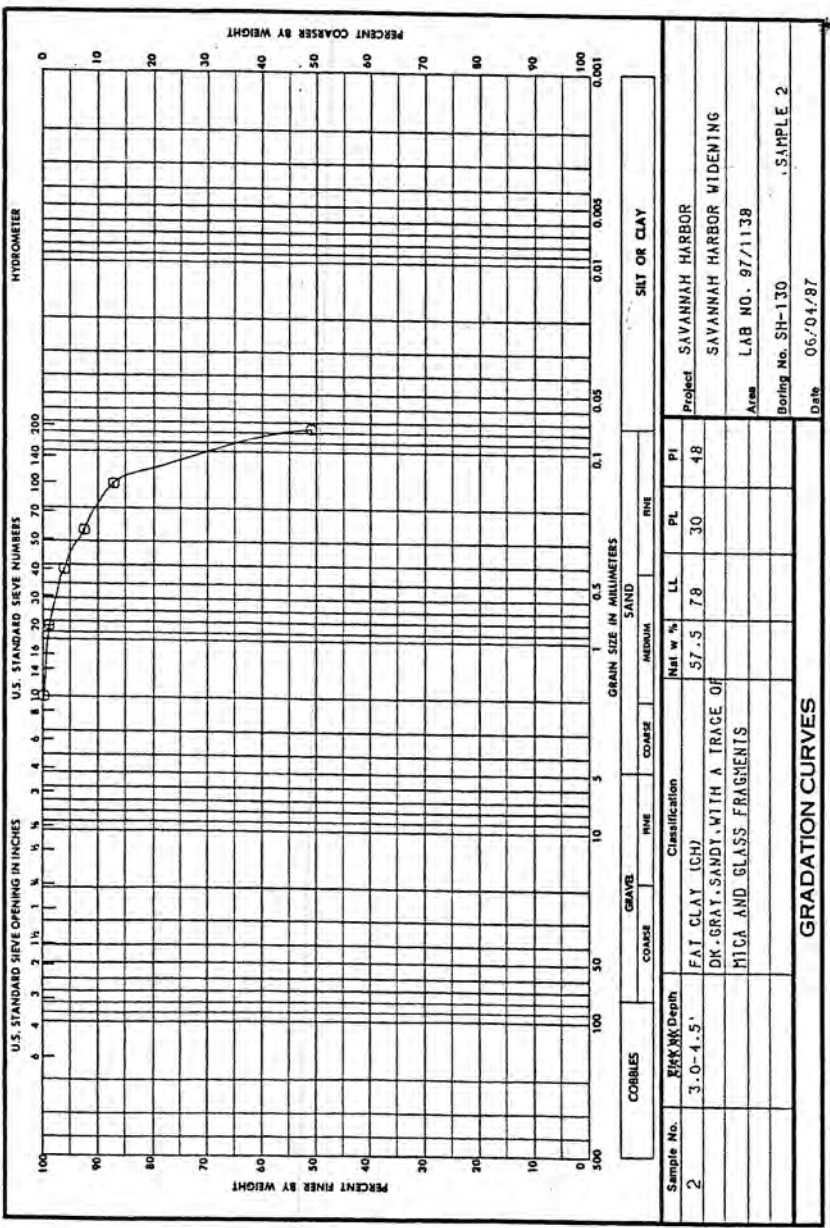
PROJECT Savannah Harbor  
Savannah Harbor WideningLAB NO. See BelowWORK ORDER NO. 5193DATE 9 June 1987REQ. NO. SAS EN GS 87-23

| Lab<br>No. | Hole<br>No. | Sample<br>No. | Depth<br>(ft) | Moisture<br>Content (%) |
|------------|-------------|---------------|---------------|-------------------------|
| 977        |             |               |               |                         |
| 999        | SH-139      | 15            | 46.5-48.0     | 25.1                    |
| 1022       | SH-143      | 1             | 0.0-1.5       | 19.2                    |
| 1024       | "           | 3             | 7.5-9.0       | 22.5                    |
| 1256       | SH-144      | 5             | 12.0-13.5     | 101.1                   |
| 1269       | SH-148      | 1             | 0.0-1.5       | 40.7                    |
| 1273       | "           | 5             | 12.0-13.5     | 44.4                    |
| 1274       | "           | 6             | 16.5-18.0     | 40.8                    |

|                                                                                                                                     |          |                                                             |              |                      |
|-------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------|--------------|----------------------|
| <b>GENERAL TEST REPORT</b><br><br>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC<br>CORPS OF ENGINEERS<br>MARIETTA, GEORGIA |          | DISTRICT/OFFICE<br><br>Savannah<br><br>CONTRACT NO.<br>--   |              |                      |
| PROJECT<br>Savannah Harbor<br>Savannah Harbor Widening                                                                              |          | DATE REPORTED<br>8 April 1987<br><br>WORK ORDER NO.<br>5193 |              |                      |
| TYPE SAMPLE SOILS:<br>Jar Samples of Disturbed Soils                                                                                |          | REQD. NO.<br>SAS-EN-GS-87-23                                |              |                      |
| HOLE NO: SH -141, 145, 146 and 147                                                                                                  |          | BASE UNIT COST<br>--                                        |              |                      |
| FOR USE AS<br>Investigation                                                                                                         |          | DATE SAMPLE RECEIVED<br>27 Feb thru 16 Mar 1987             |              |                      |
| TESTED FOR<br>Lab Classification and Field Moisture                                                                                 |          | LAB NO.<br>97/1007-1088                                     |              |                      |
| <input type="checkbox"/> MEETS SPECIFICATIONS                                                                                       |          | <input type="checkbox"/> FAILS SPECIFICATIONS (See below)   |              |                      |
| N/A                                                                                                                                 |          |                                                             |              |                      |
| Lab. No.                                                                                                                            | Hole No. | Sample No.                                                  | Depth. (Ft.) | Moisture Content (%) |
| 97/                                                                                                                                 |          |                                                             |              |                      |
| 1007                                                                                                                                | SH-141   | 5                                                           | 9.0/10.5     | 90.8*                |
| 1008                                                                                                                                | "        | 6                                                           | 13.5/15.0    | 66.1                 |
| 1018                                                                                                                                | "        | 16A                                                         | 52.5/53.5    | 39.0                 |
| 1044                                                                                                                                | SH-145   | 3A                                                          | 6.0/7.0      | 28.4                 |
| 1045                                                                                                                                | "        | 3B                                                          | 7.0/7.5      | 91.3*                |
| 1047                                                                                                                                | "        | 5                                                           | 13.5/15.0    | 18.9                 |
| 1050                                                                                                                                | "        | 7                                                           | 21.0/22.5    | 94.4                 |
| 1052                                                                                                                                | "        | 9A                                                          | 27.0/27.5    | 103.3*               |
| 1065                                                                                                                                | SH-146   | 4                                                           | 13.5/15.0    | 84.5                 |
| 1079                                                                                                                                | SH-147   | 2                                                           | 3.0/4.5      | 29.3                 |
| 1082                                                                                                                                | "        | 5                                                           | 12.0/15.0    | 96.7                 |
| 1088                                                                                                                                | "        | 11                                                          | 40.5/42.0    | 134.2*               |
| REMARKS:<br><br>*See lab classification data on ENG Form 2087.                                                                      |          |                                                             |              |                      |
| REPORTED BY<br><br>DATE _____                                                                                                       |          | TESTED BY<br>WB, JL<br><br>SAMPLED BY<br>District           |              | CHECKED BY<br>ES     |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193  
Req. No. SAS-ENG-6S-87-23

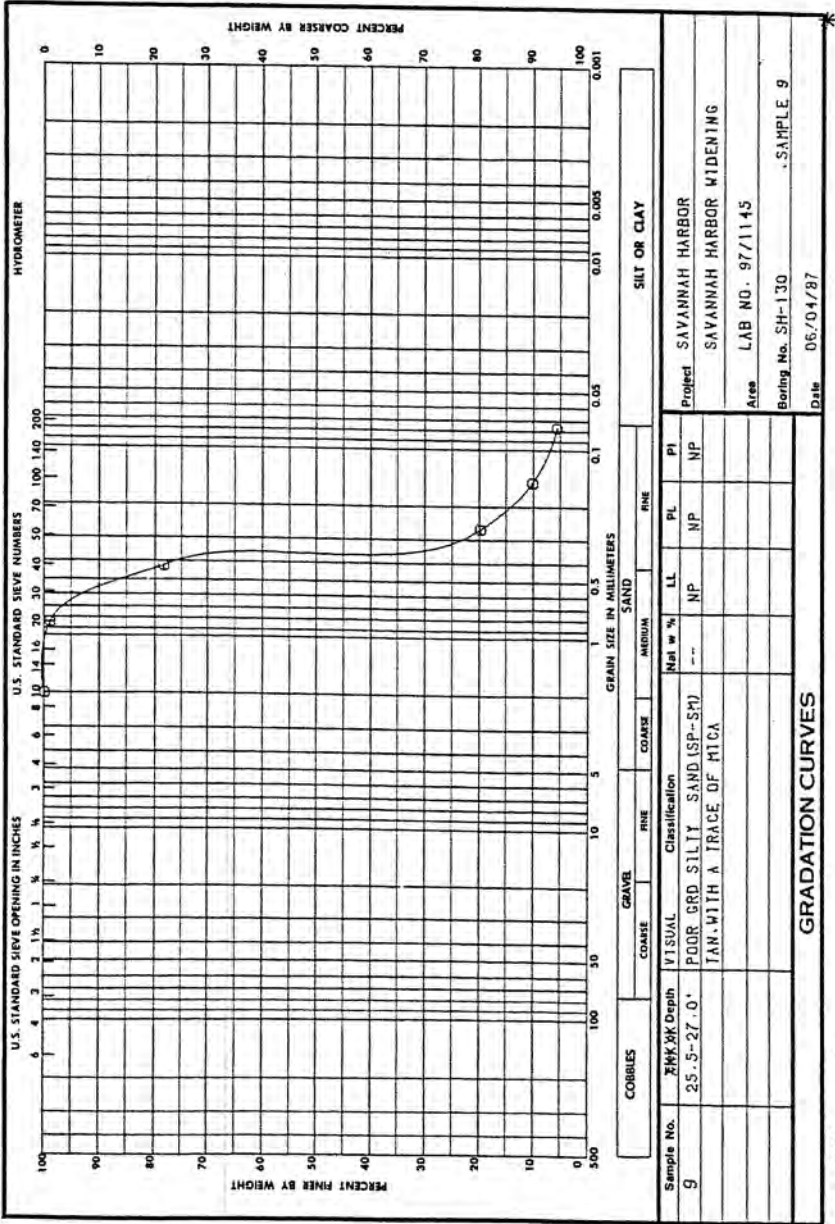


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1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

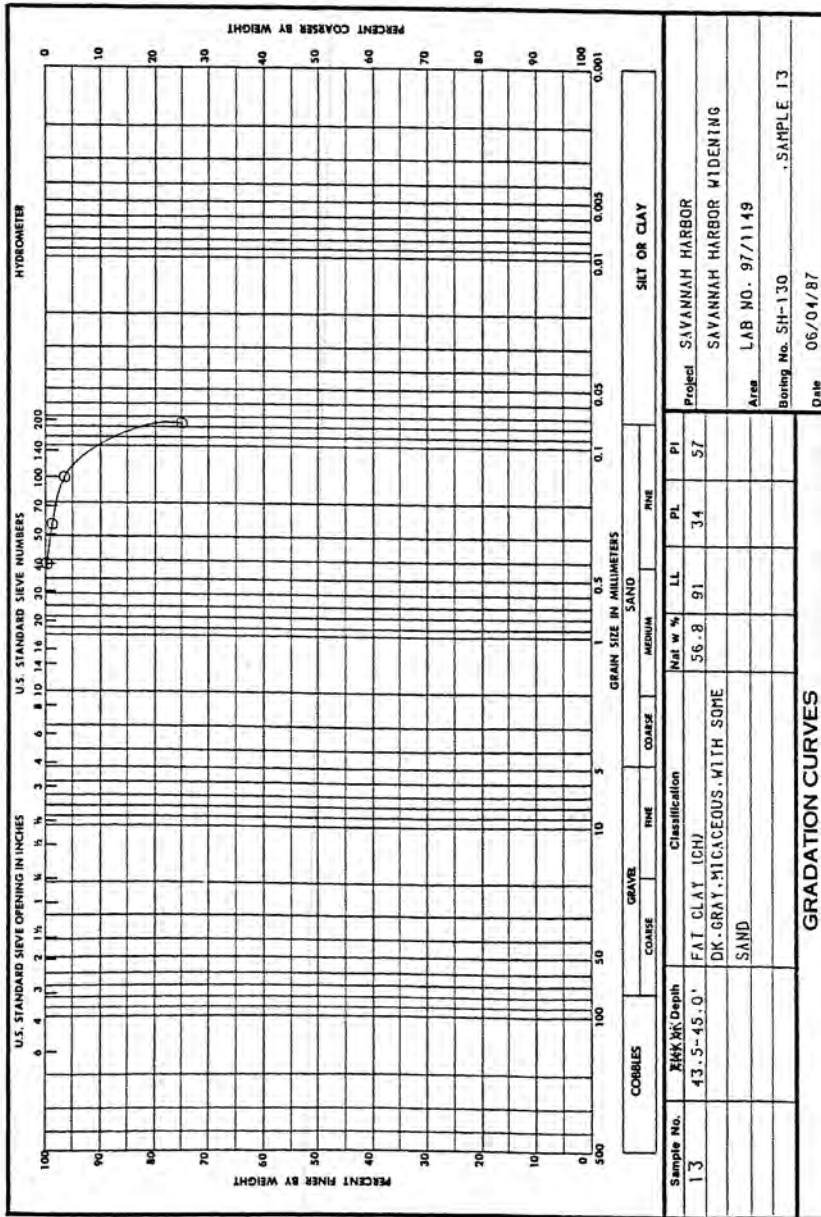
Req. No. SAS-ENG-6S-87-23



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W.O. No. 5193

Req. No. SAS-ENG-65-87-23

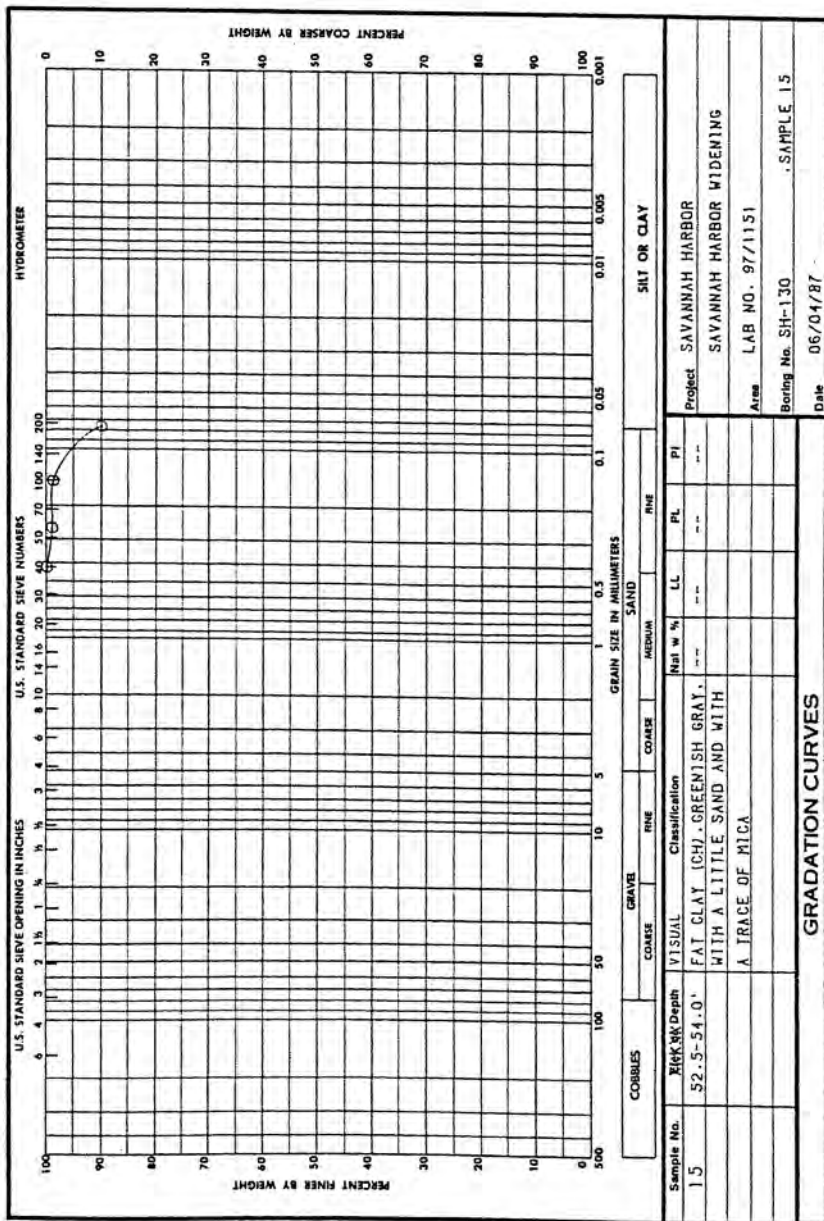


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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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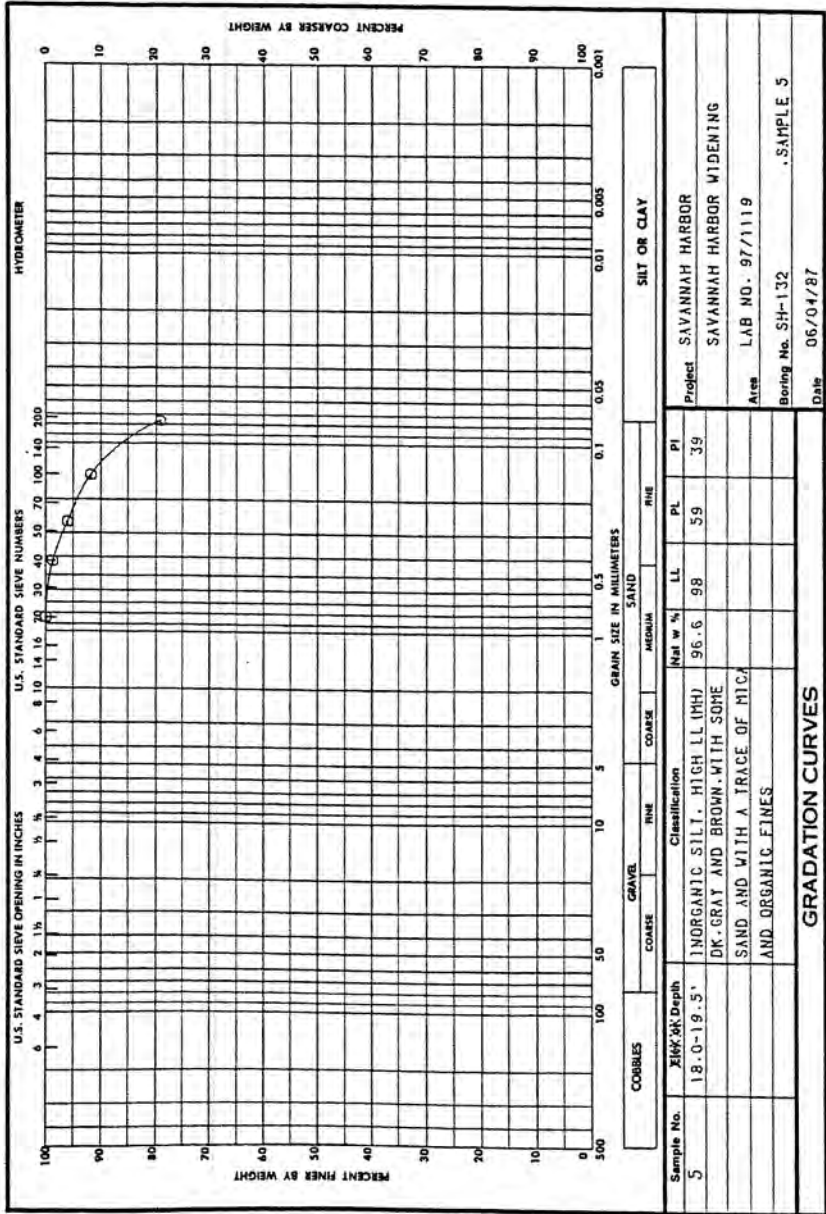




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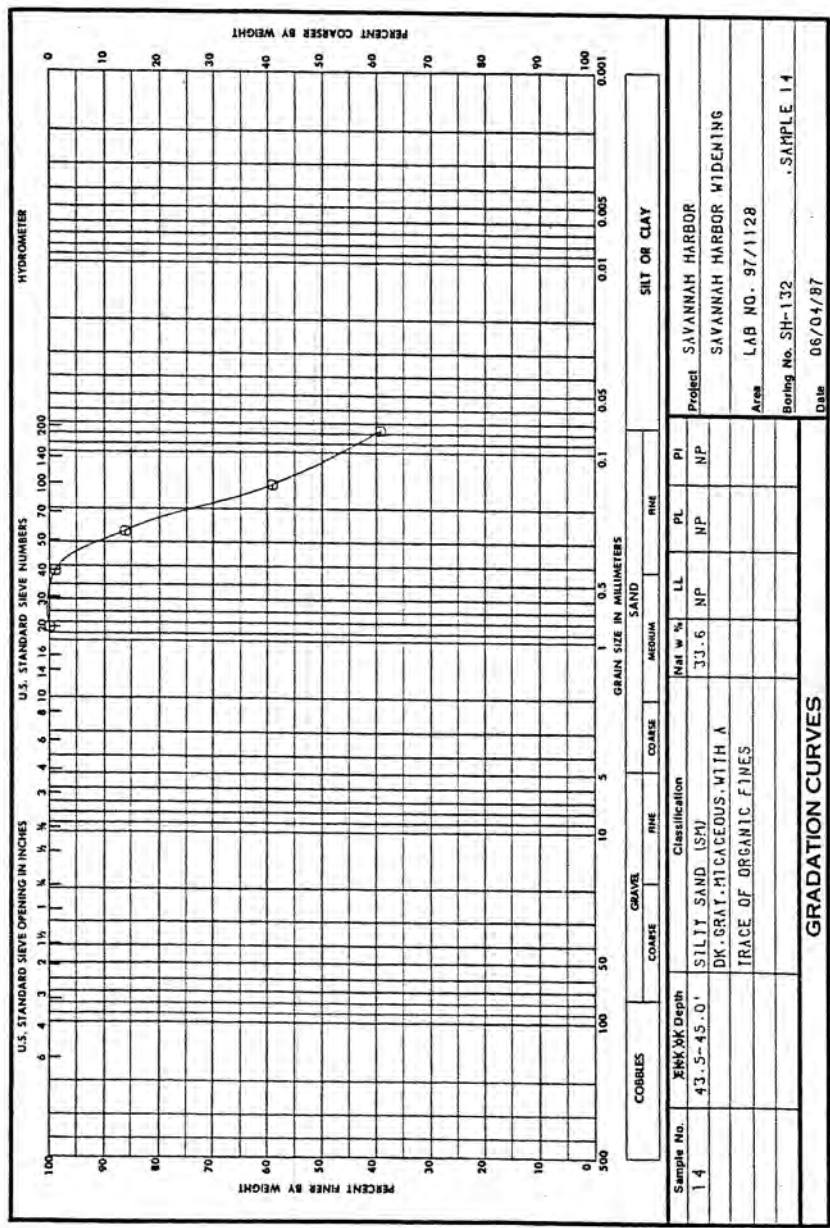


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

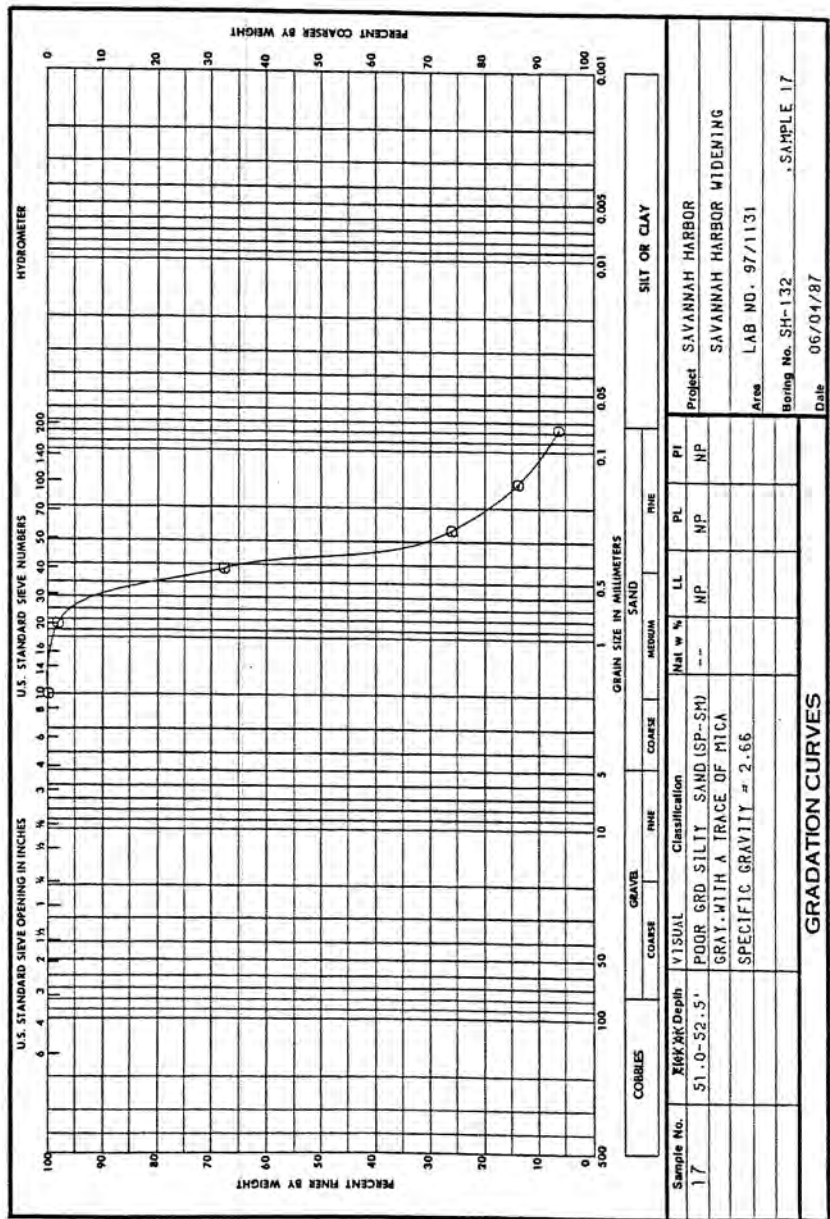
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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

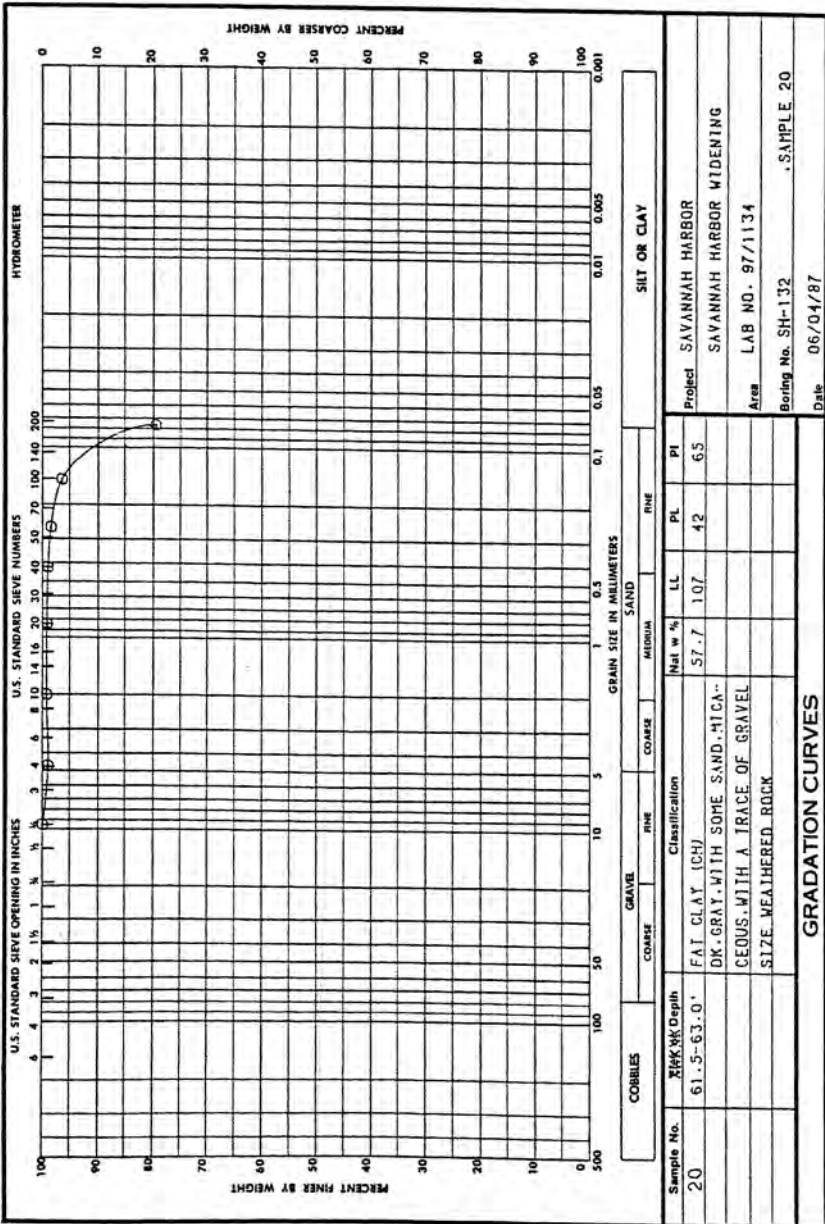
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Req. No. SAS-ENG-GS-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.L. NO. 5193

Req. No. SAS-ENG-GS-87-23

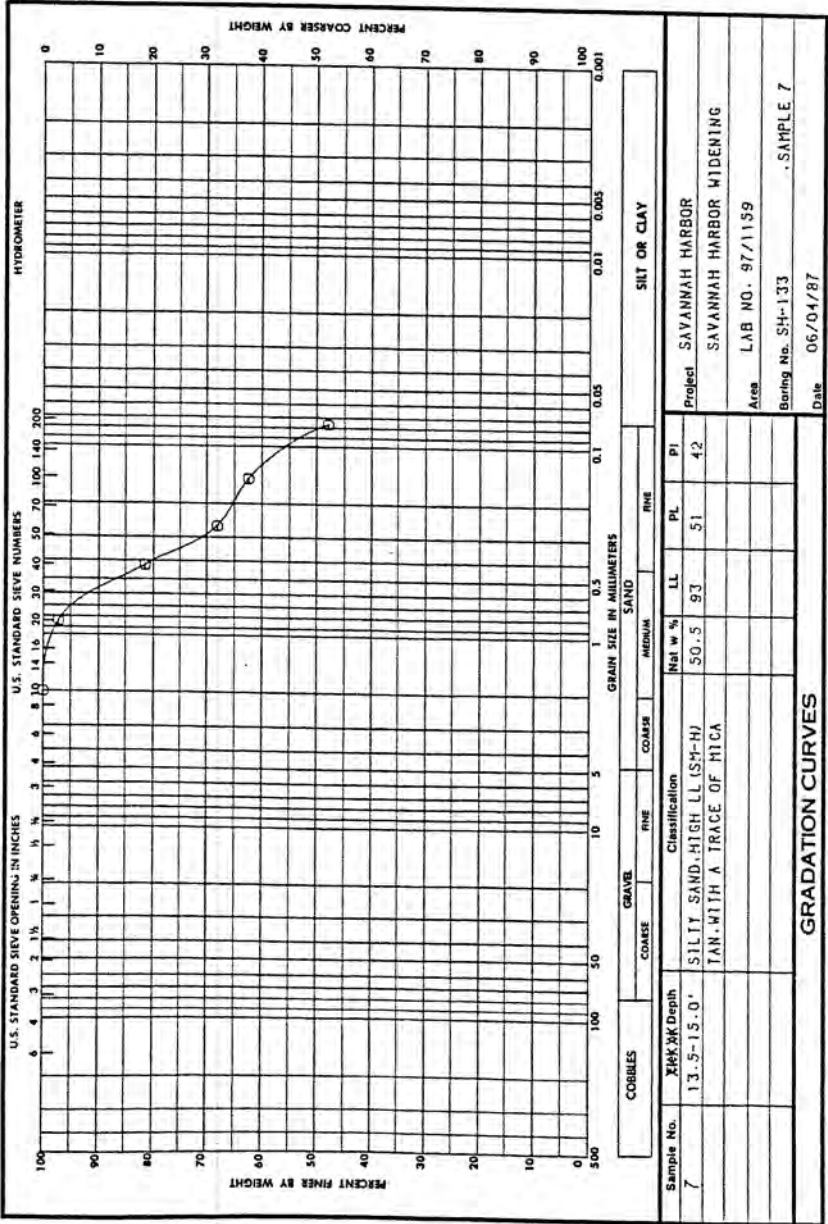


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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-ENG-GS-87-23



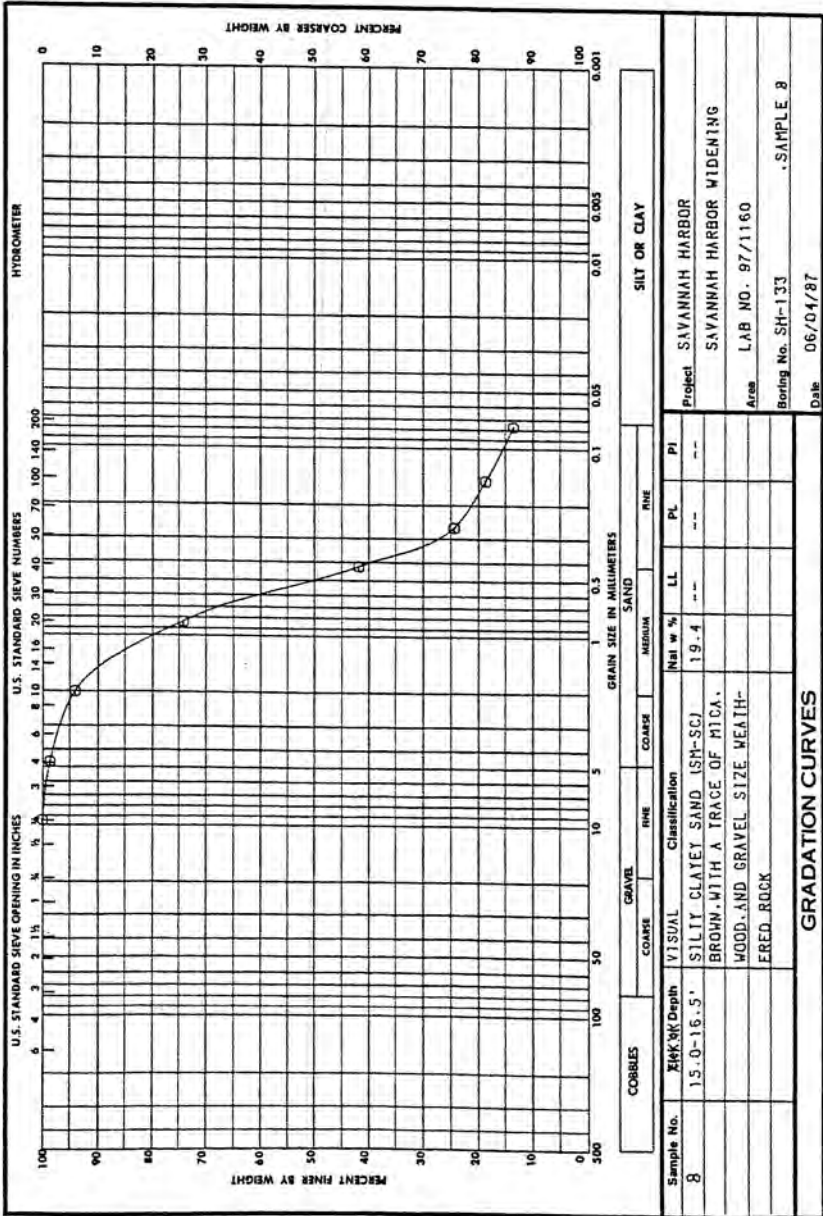
ENG 2087

FORM  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-ENG-GS-87-23



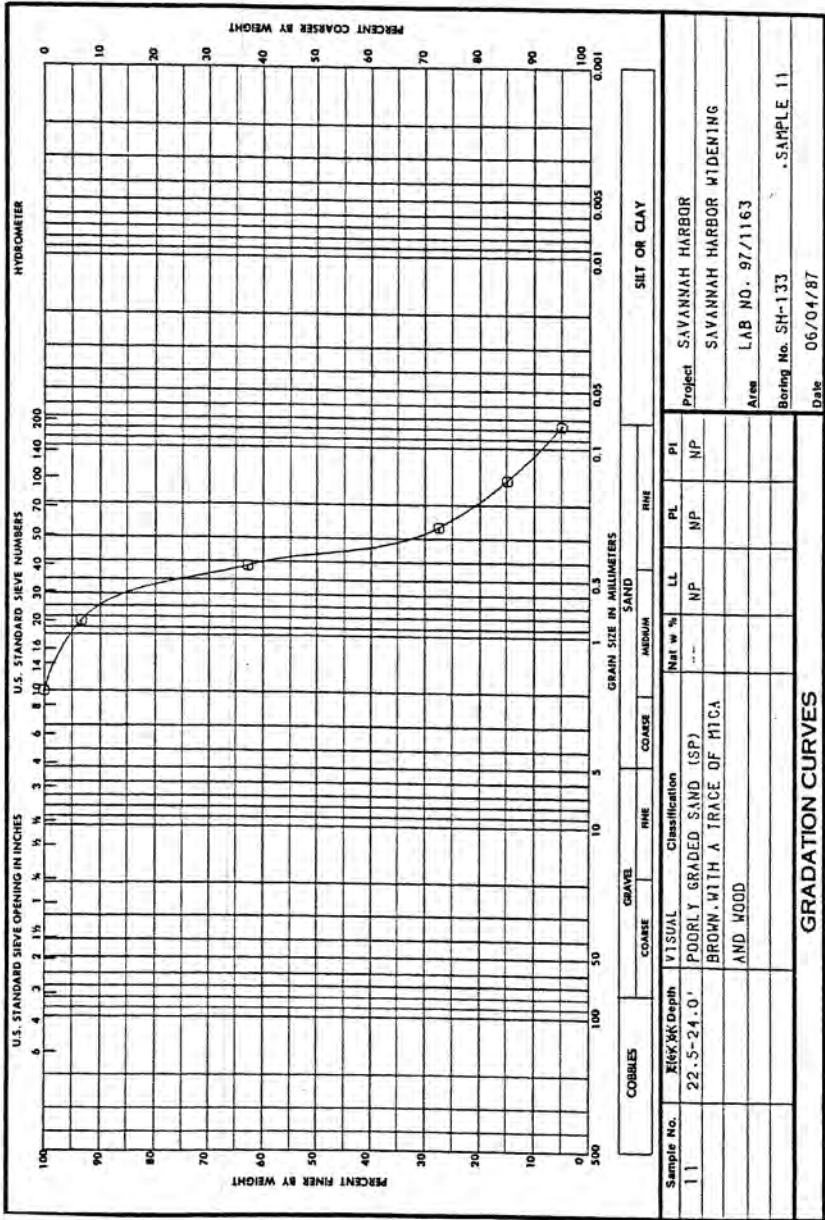
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-ENG-GS-87-23



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1 MAY 63

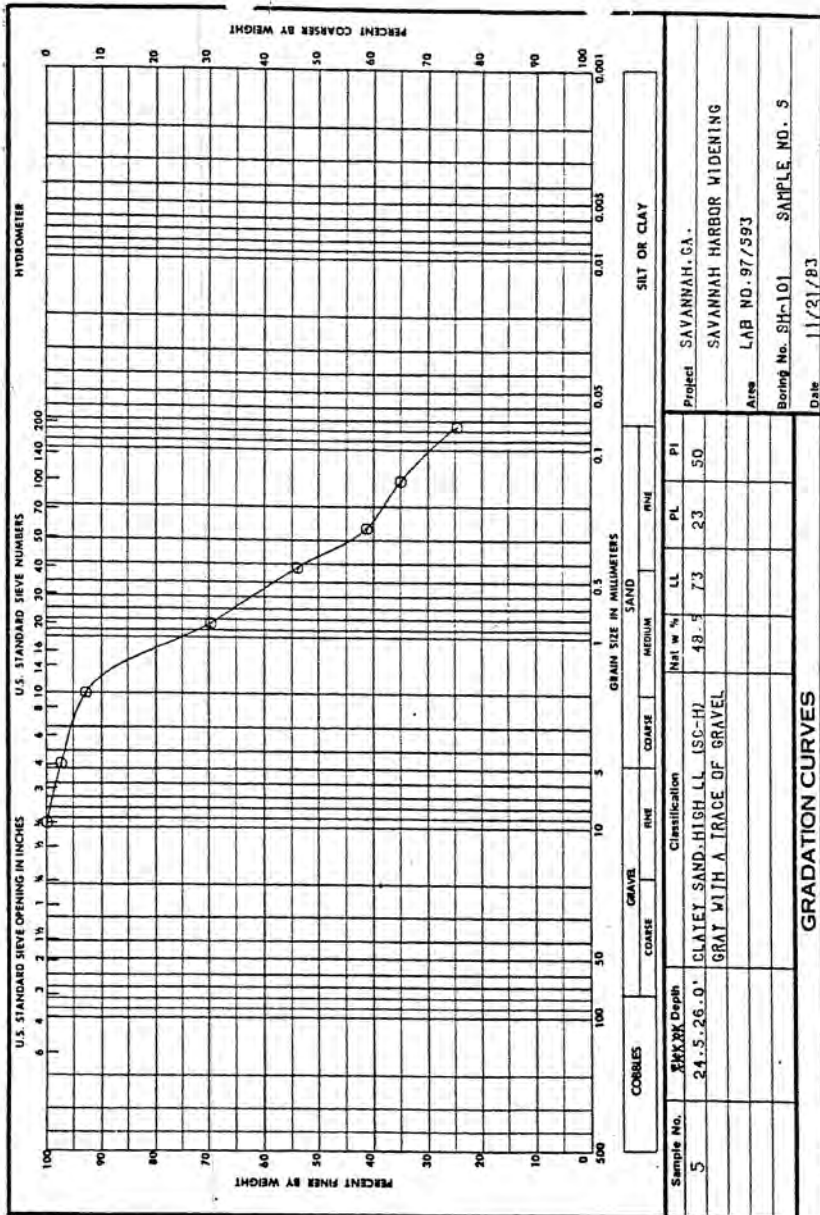




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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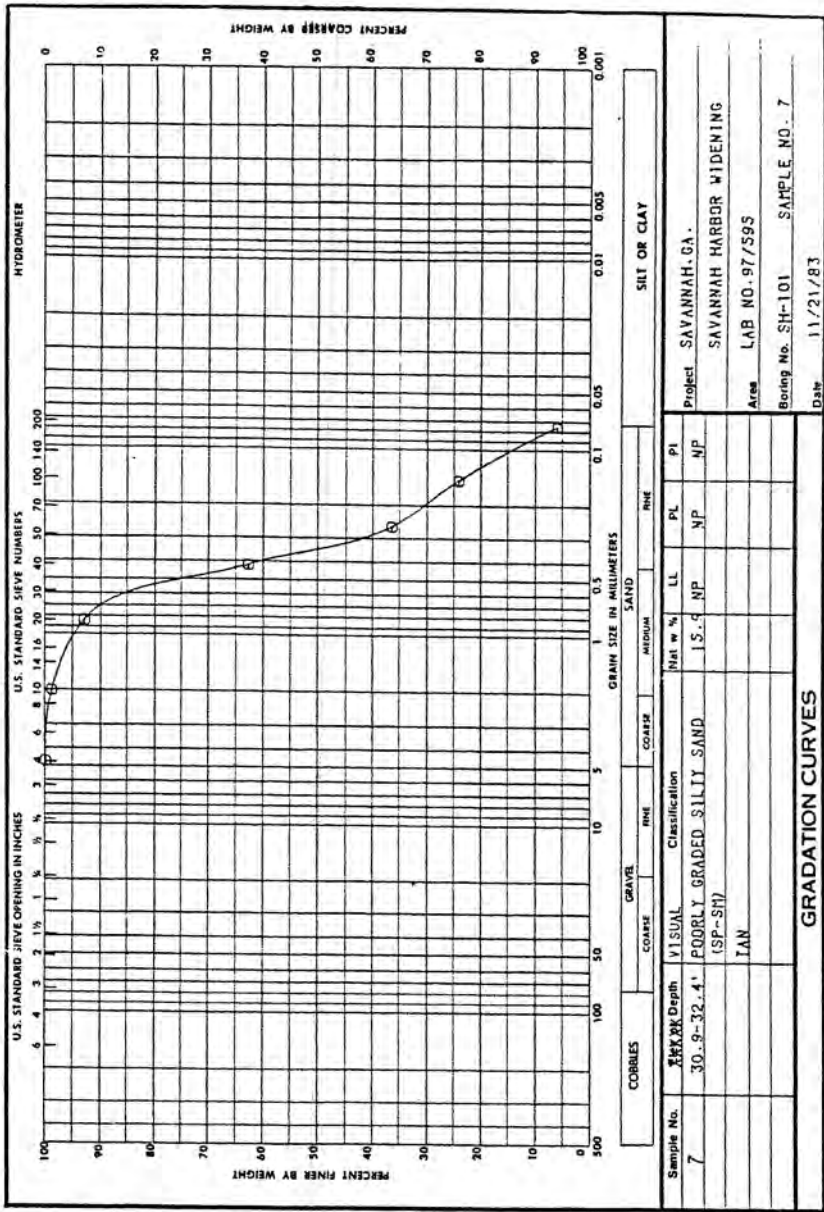
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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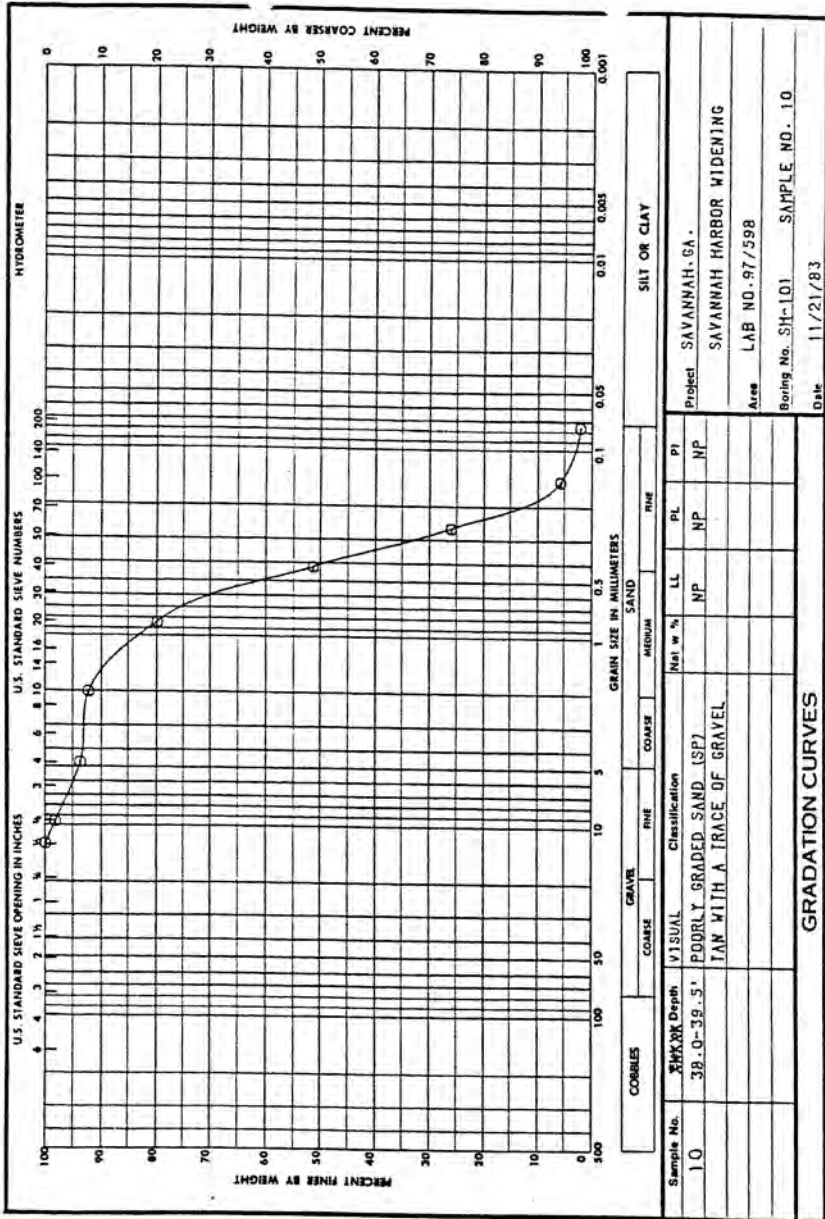


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-Q3

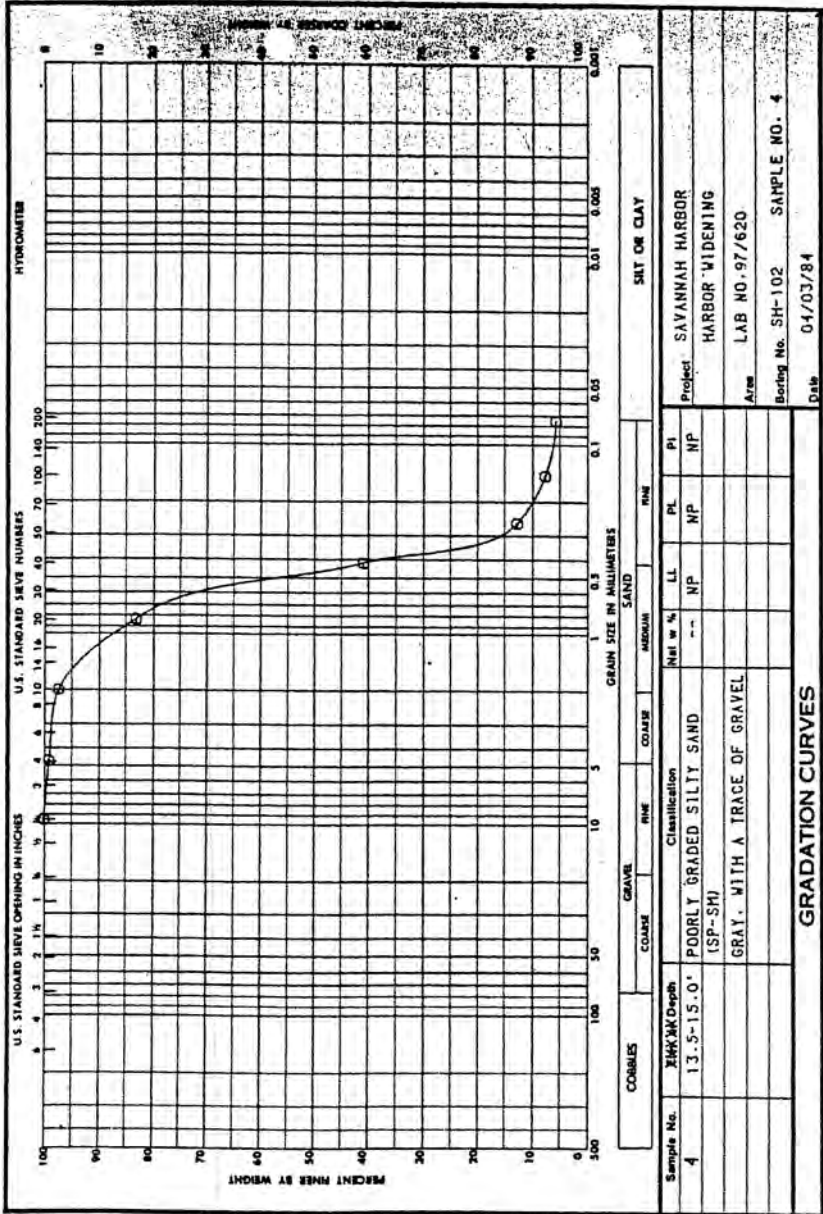


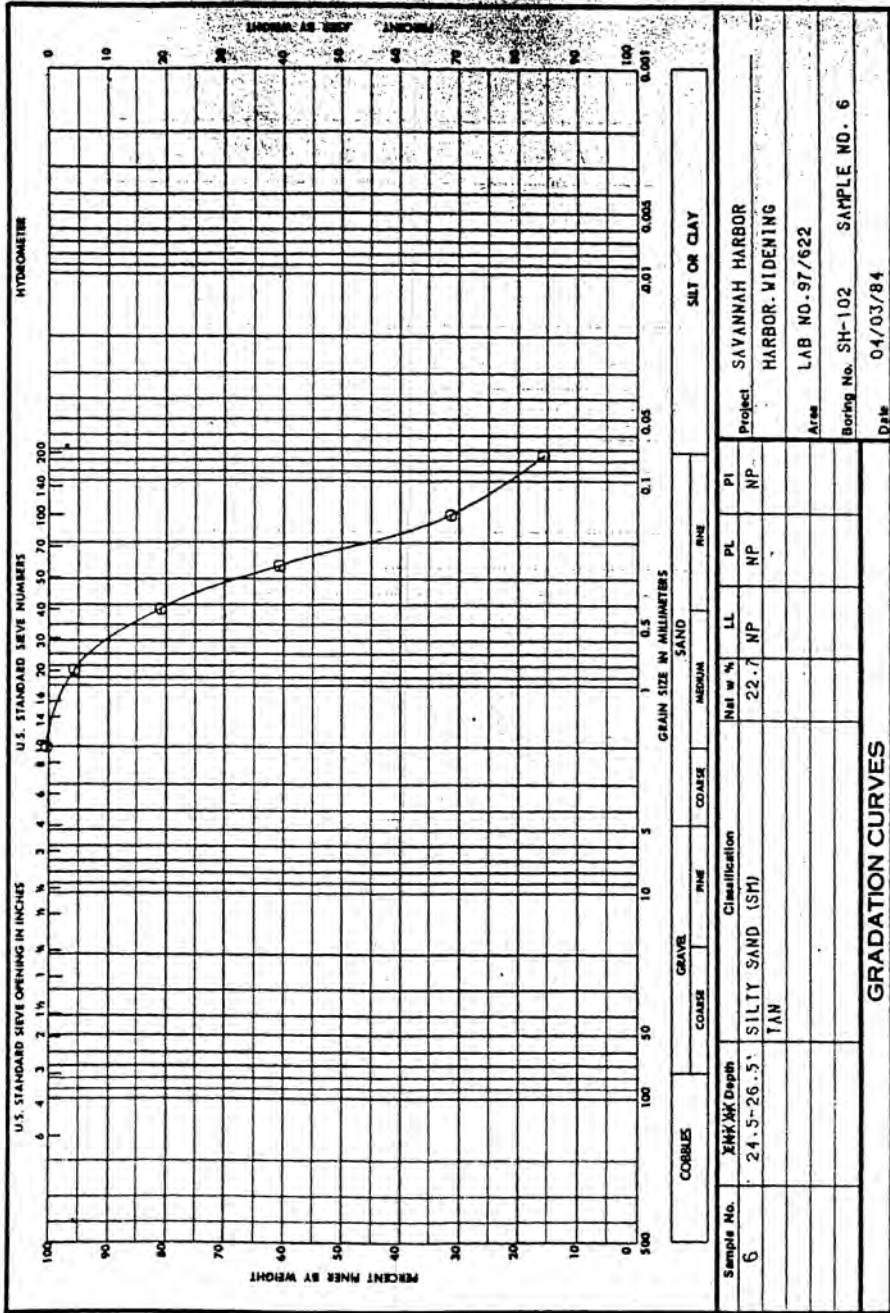


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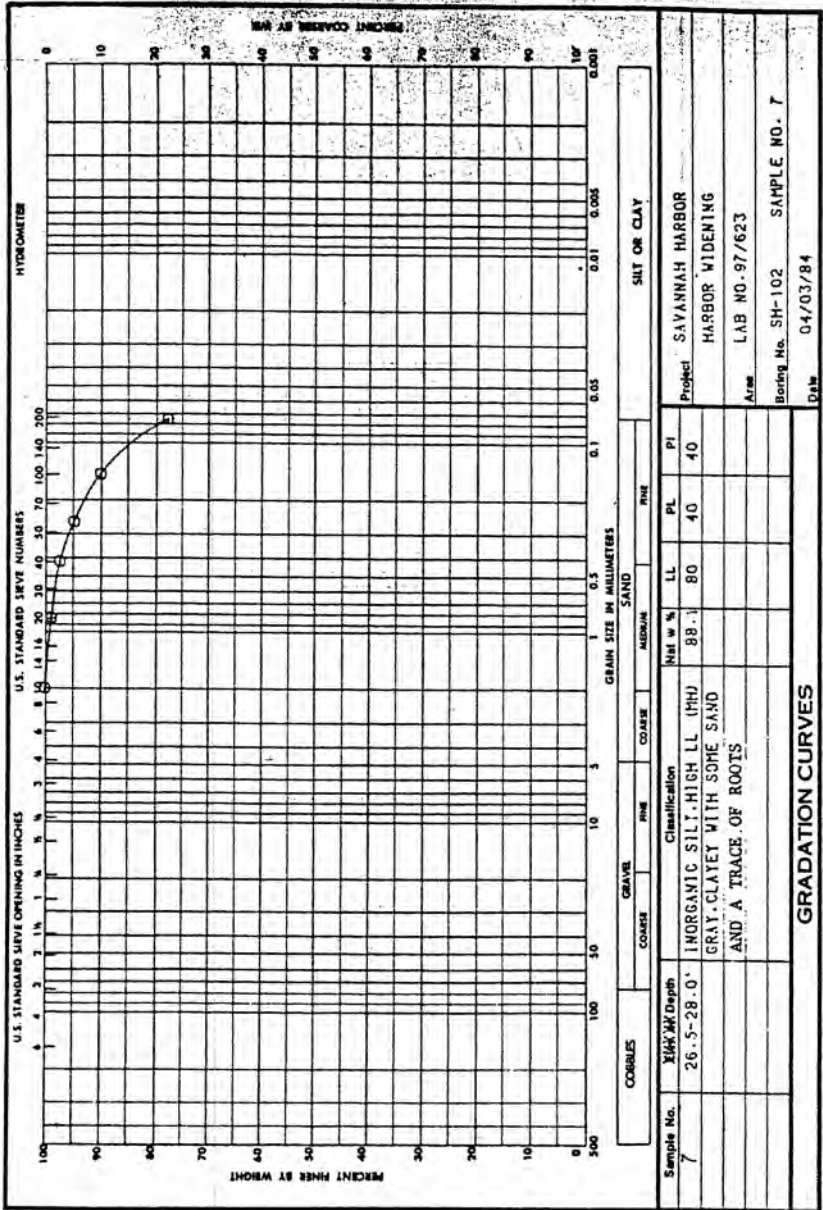
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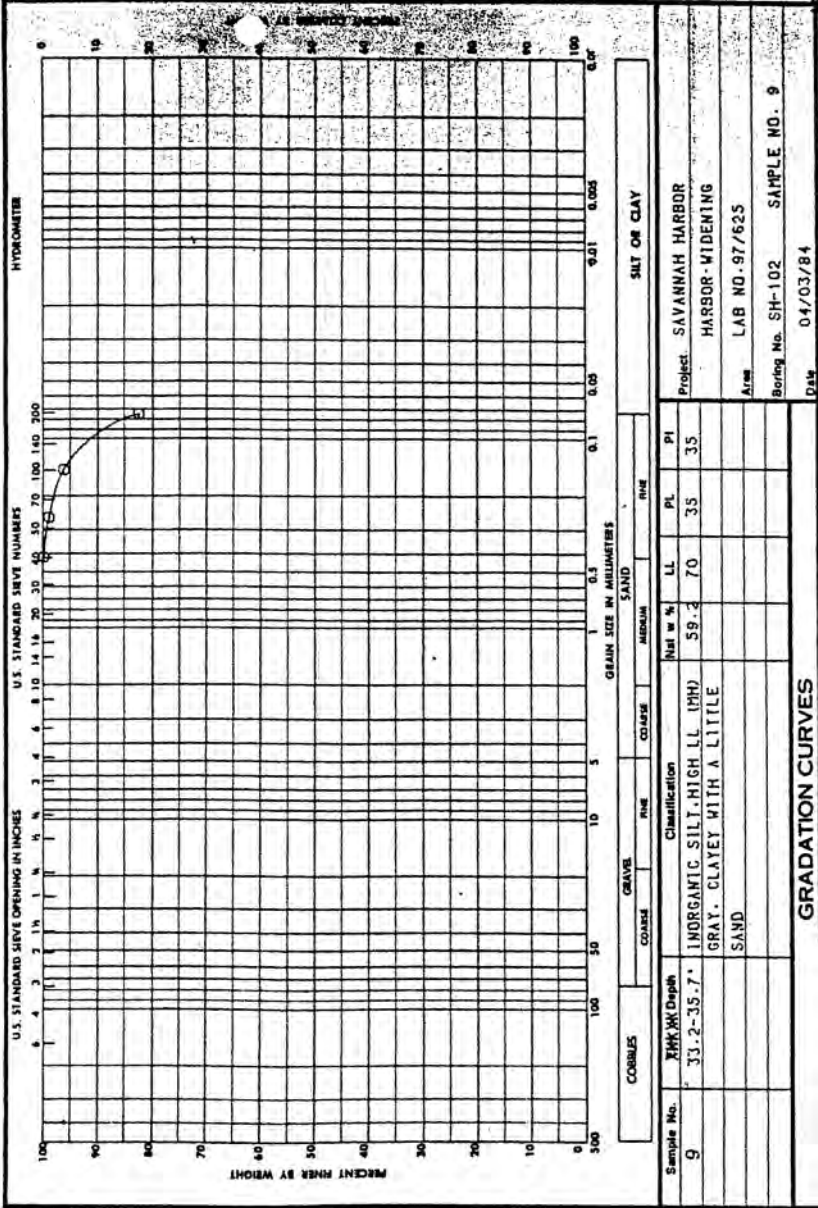




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Req. No. EN-GS-84-03

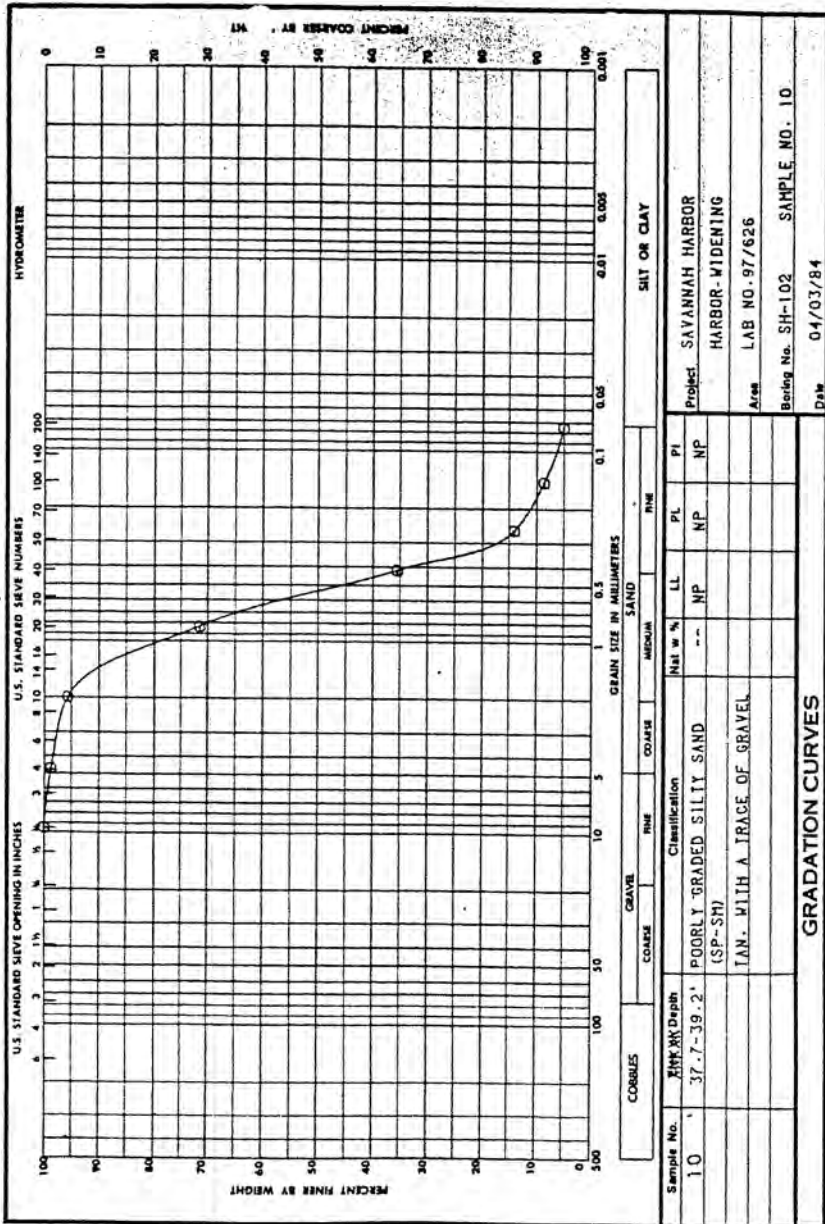


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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03

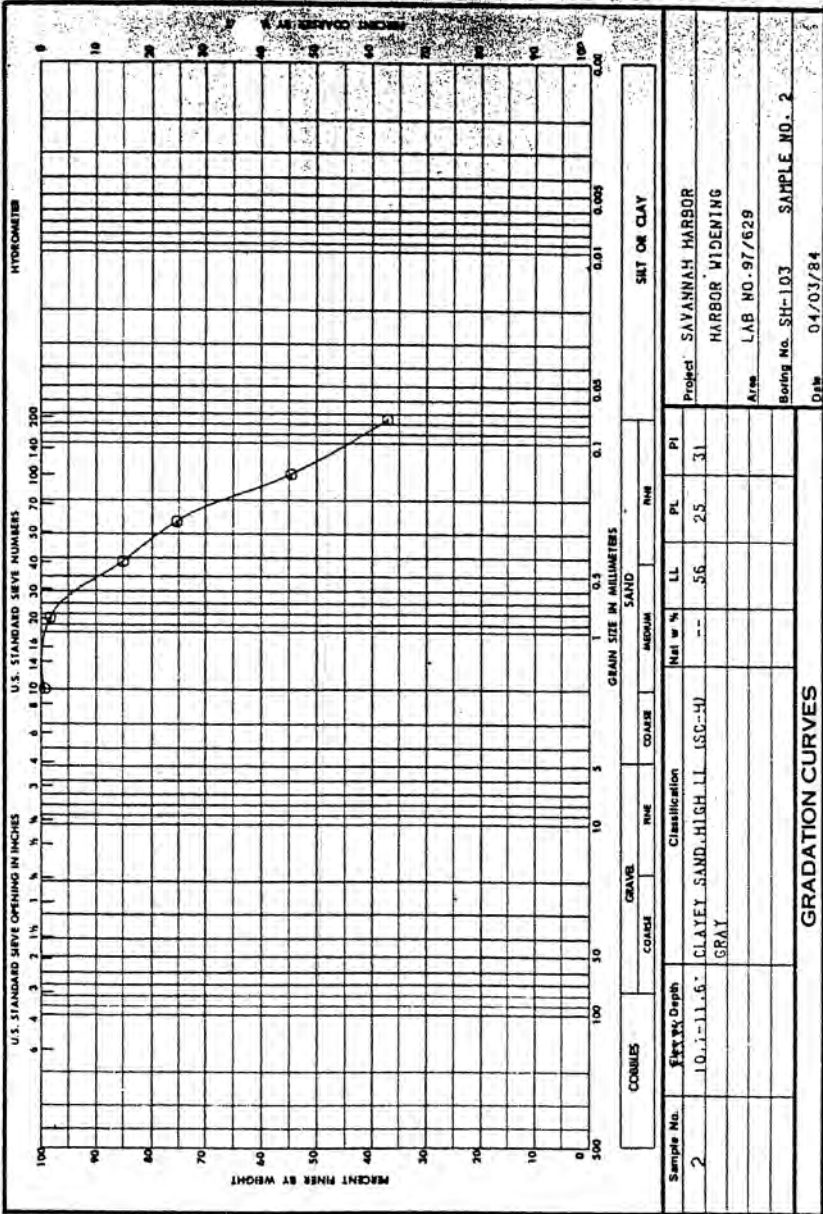


ENG FORM  
1 MAY 83 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

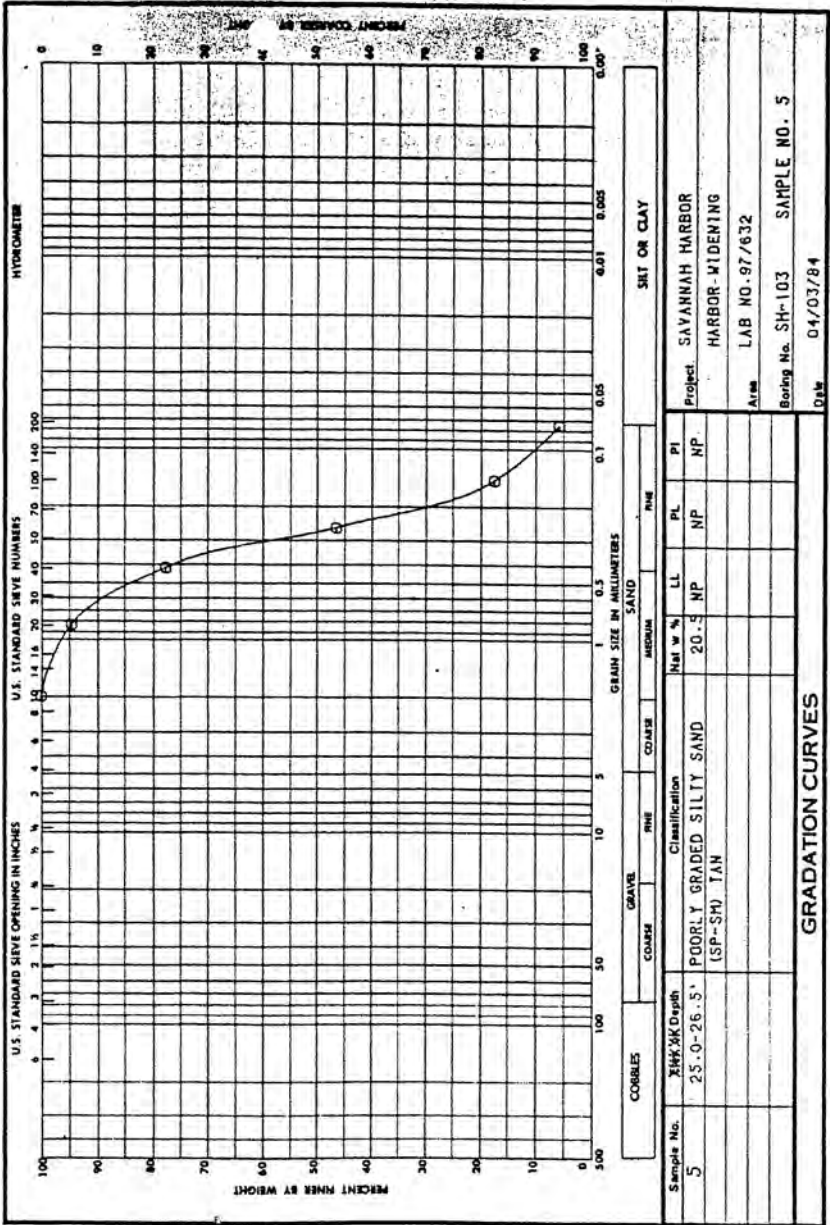
W.J. NO. 3778

Req. No. EN-GS-84-03



ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

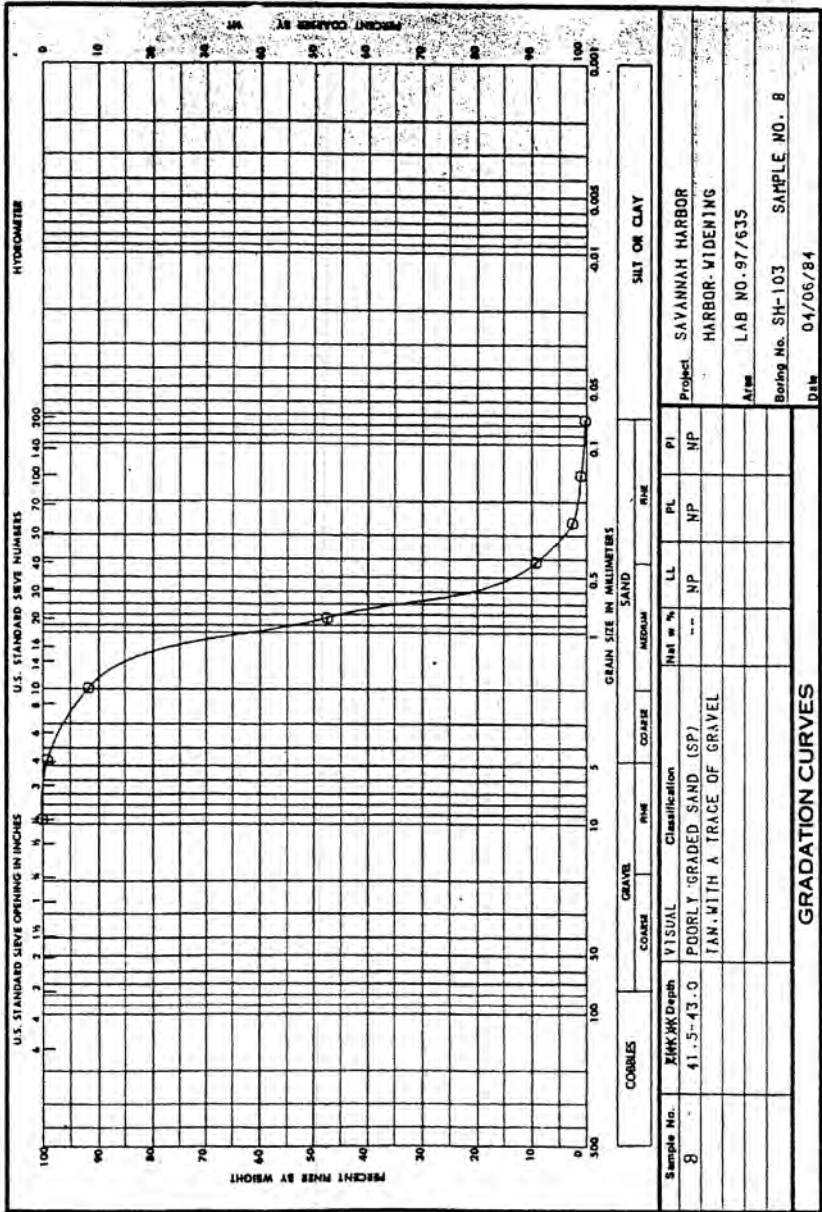


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03



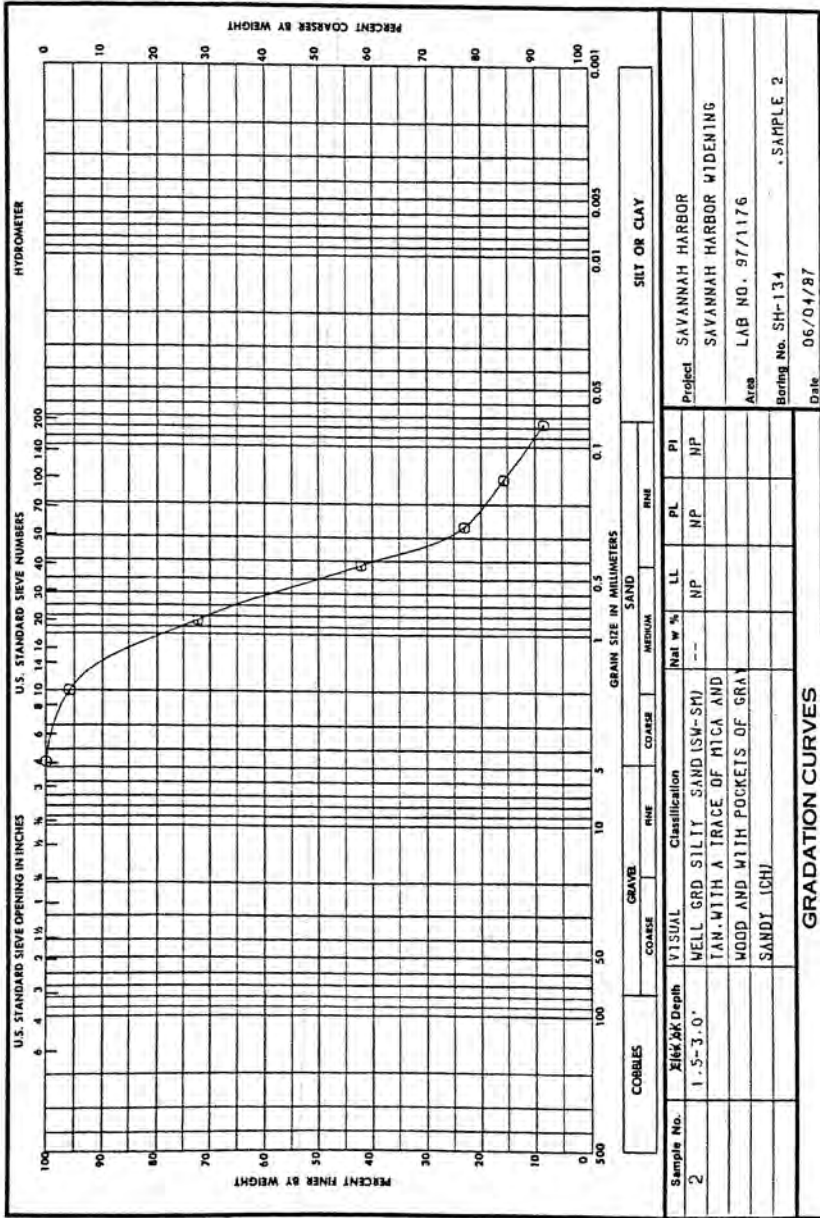
ENG FORM 2087  
1 MAY 83



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-ENG-GS-87-23



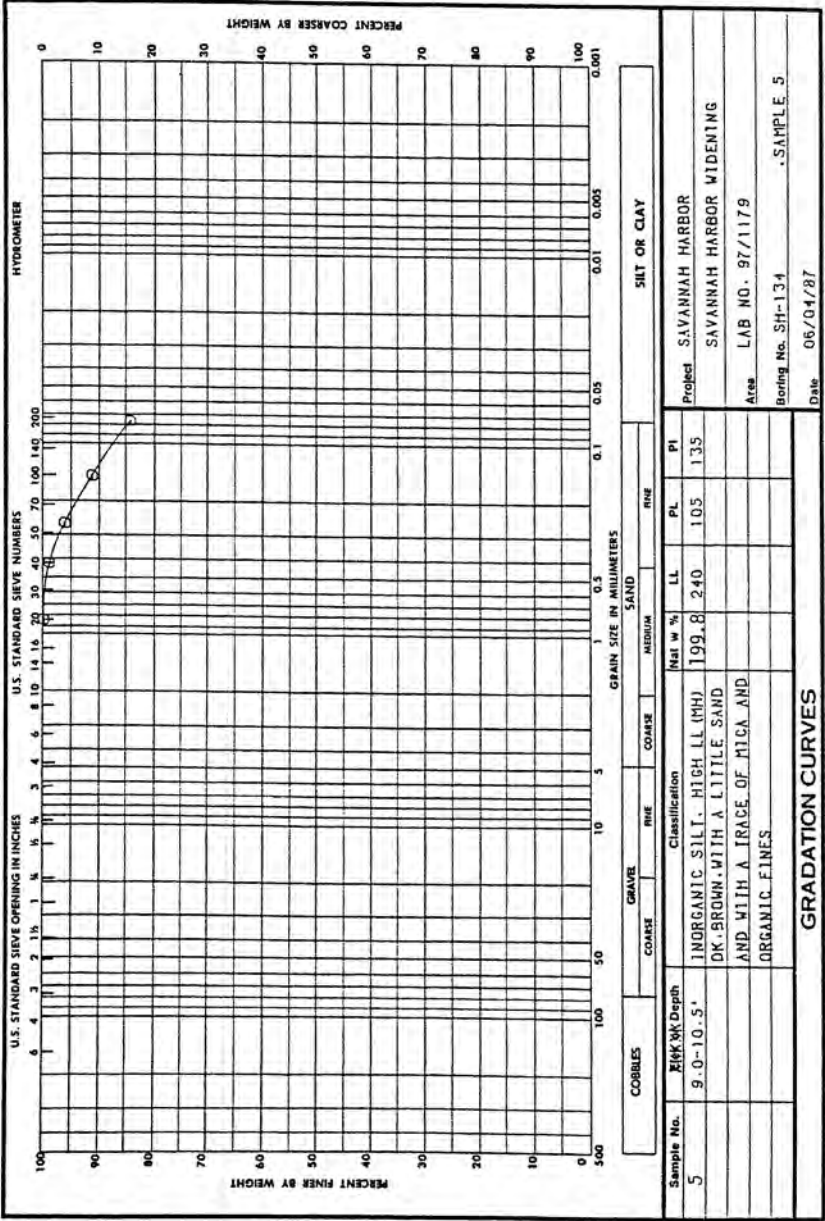
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-ENG-65-87-23

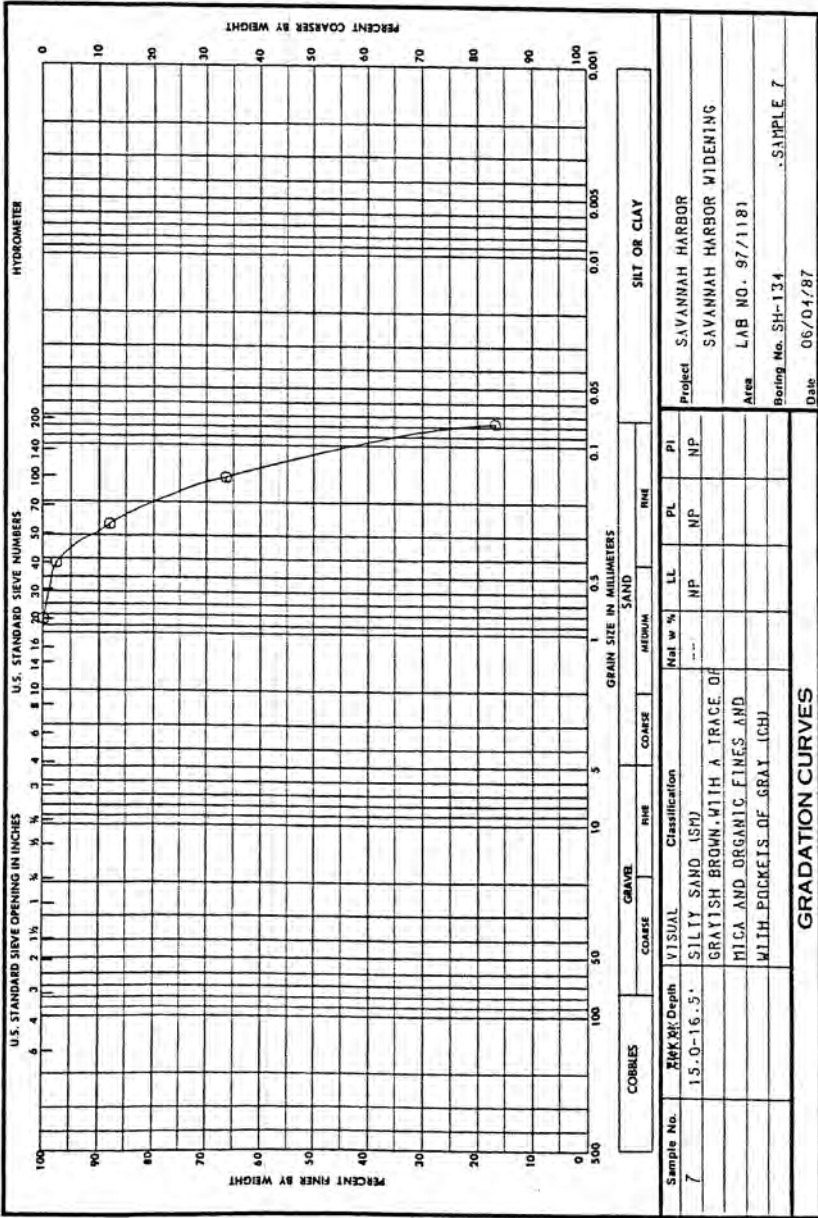




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-ENG-GS-87-23

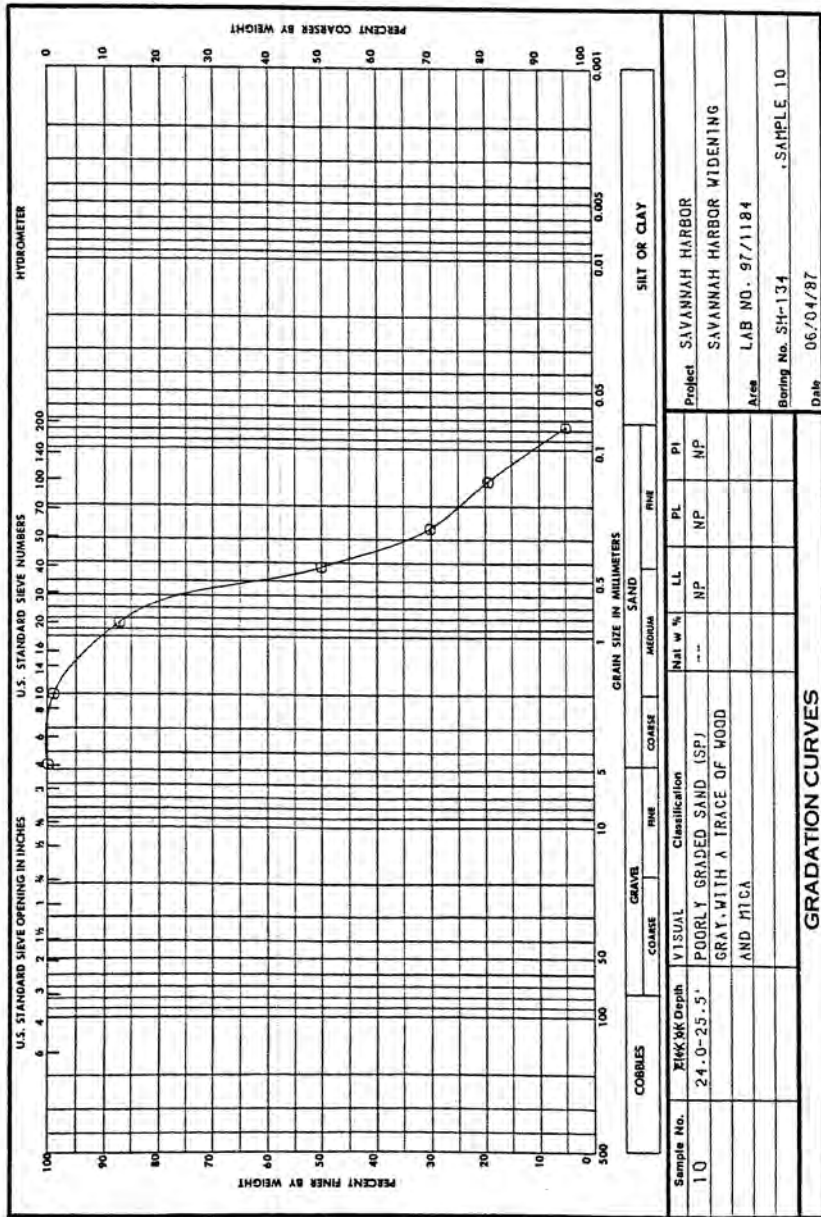


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

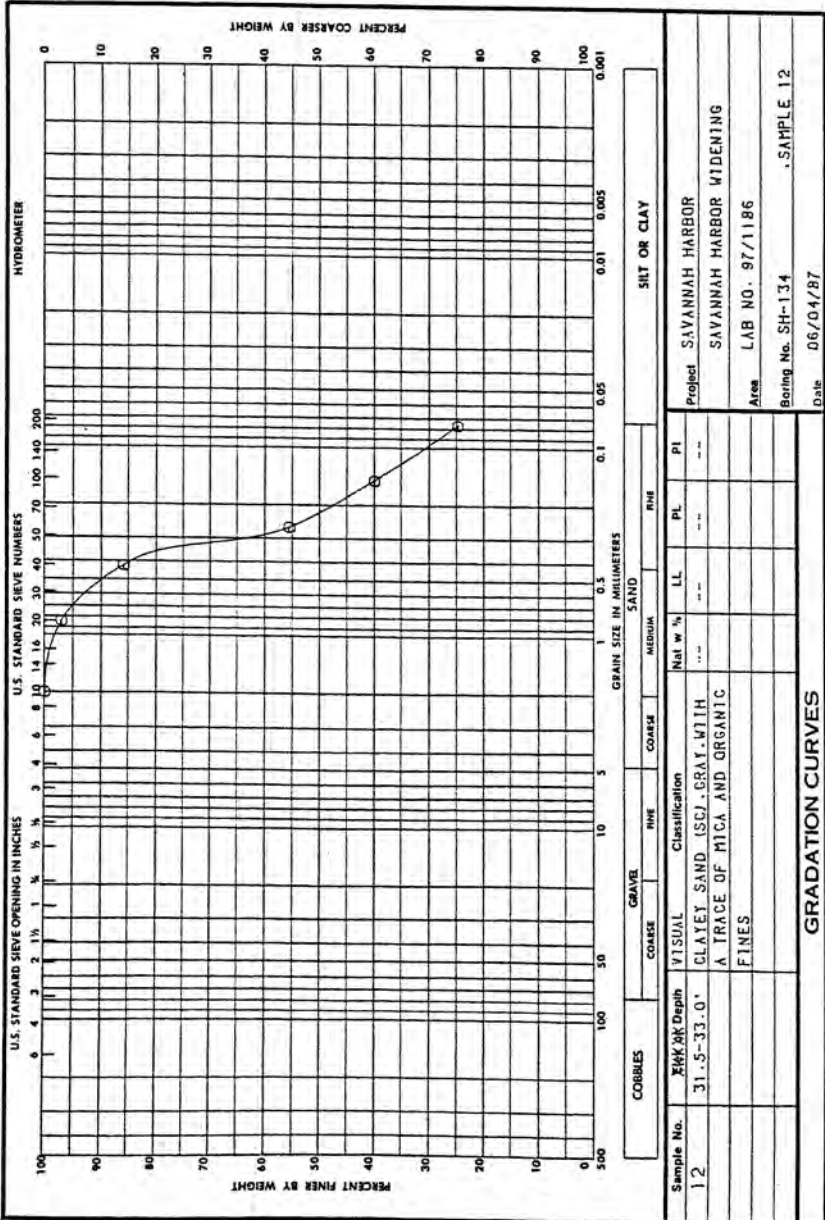
Req. No. SAS-EN-6S-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

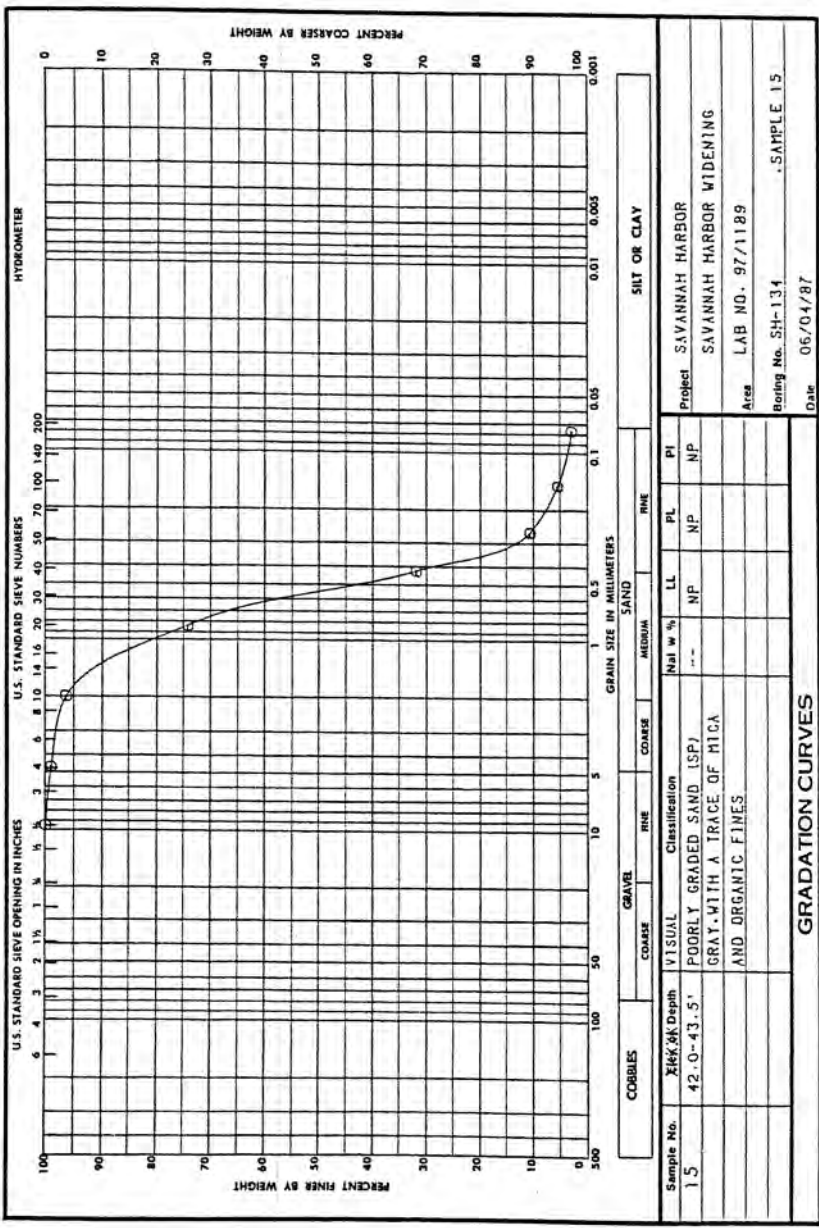


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

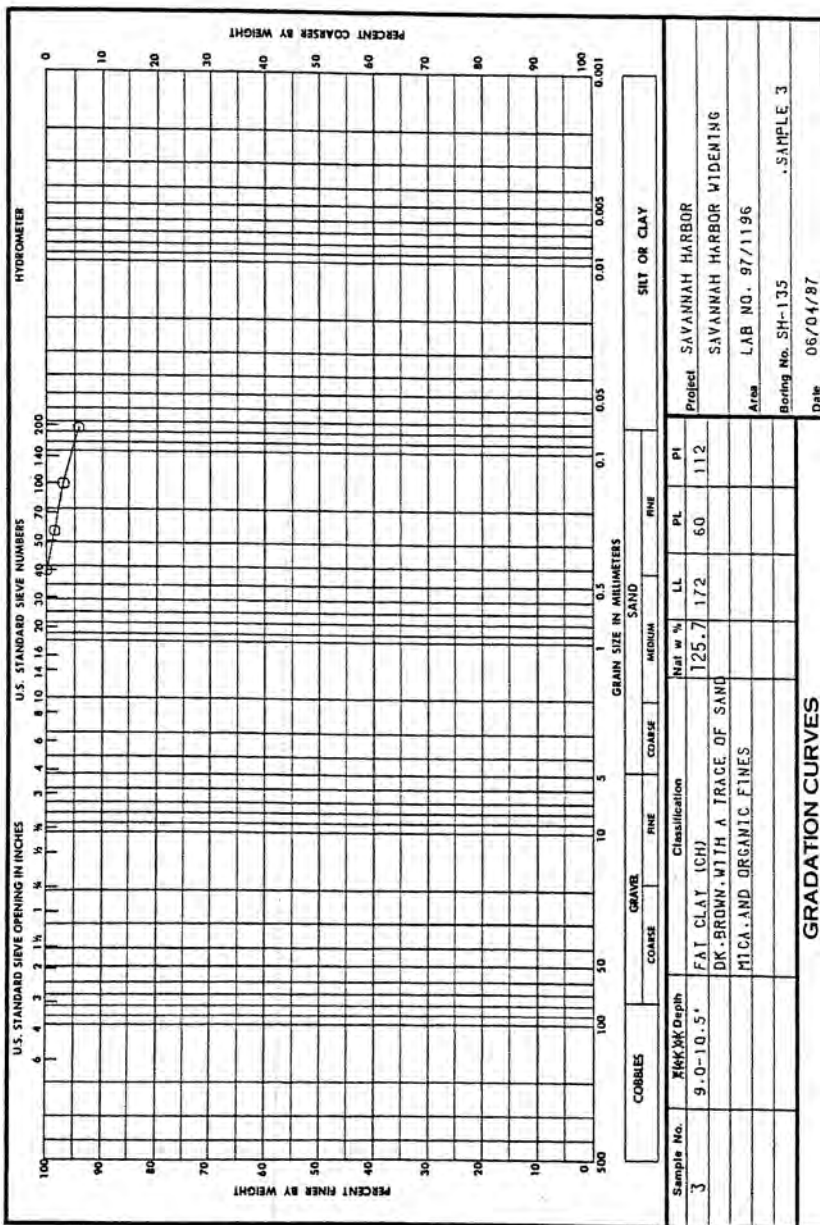


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SALS-EN-GS-87-23

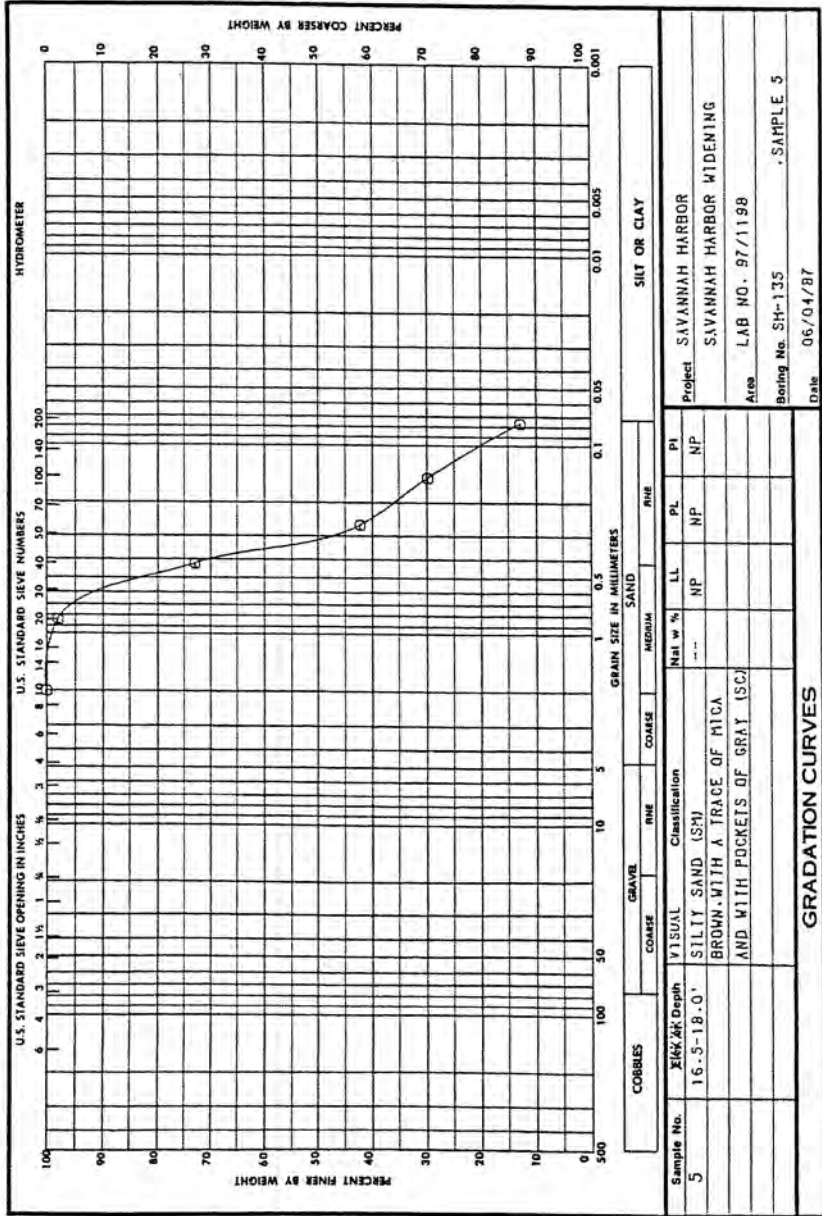


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23

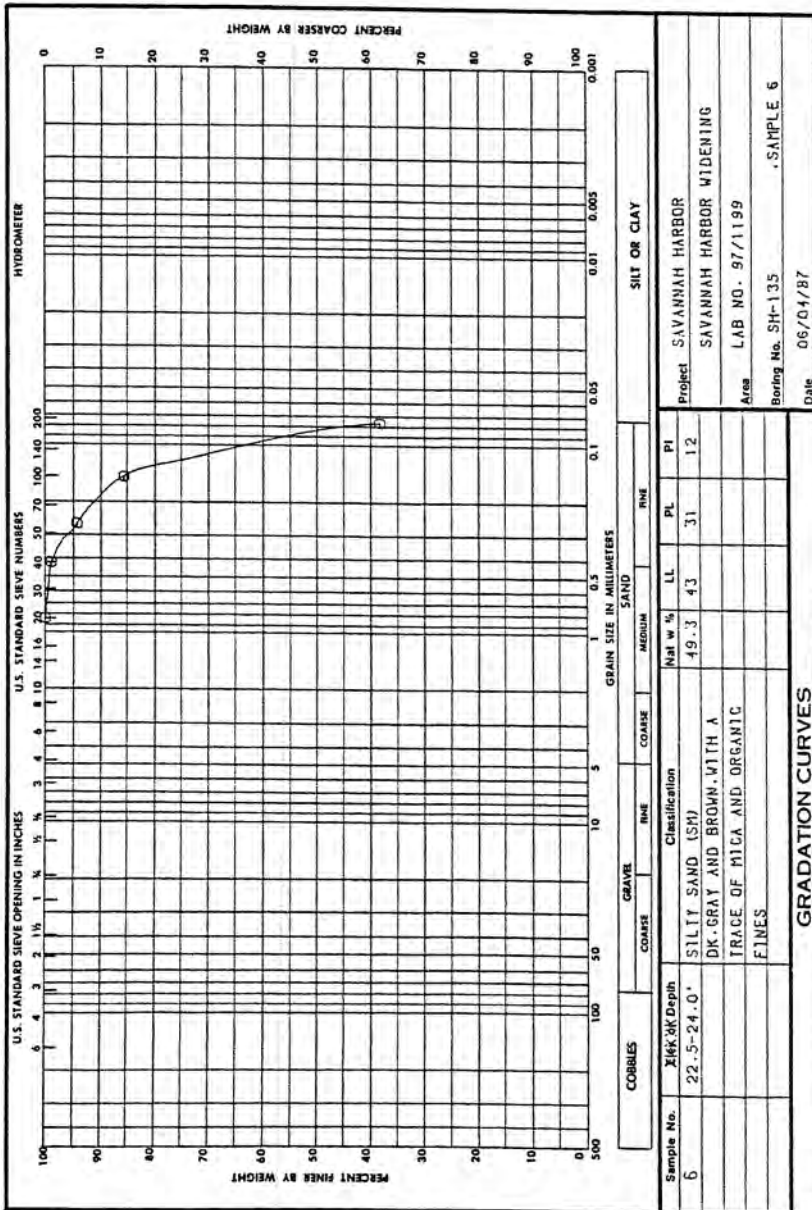


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23



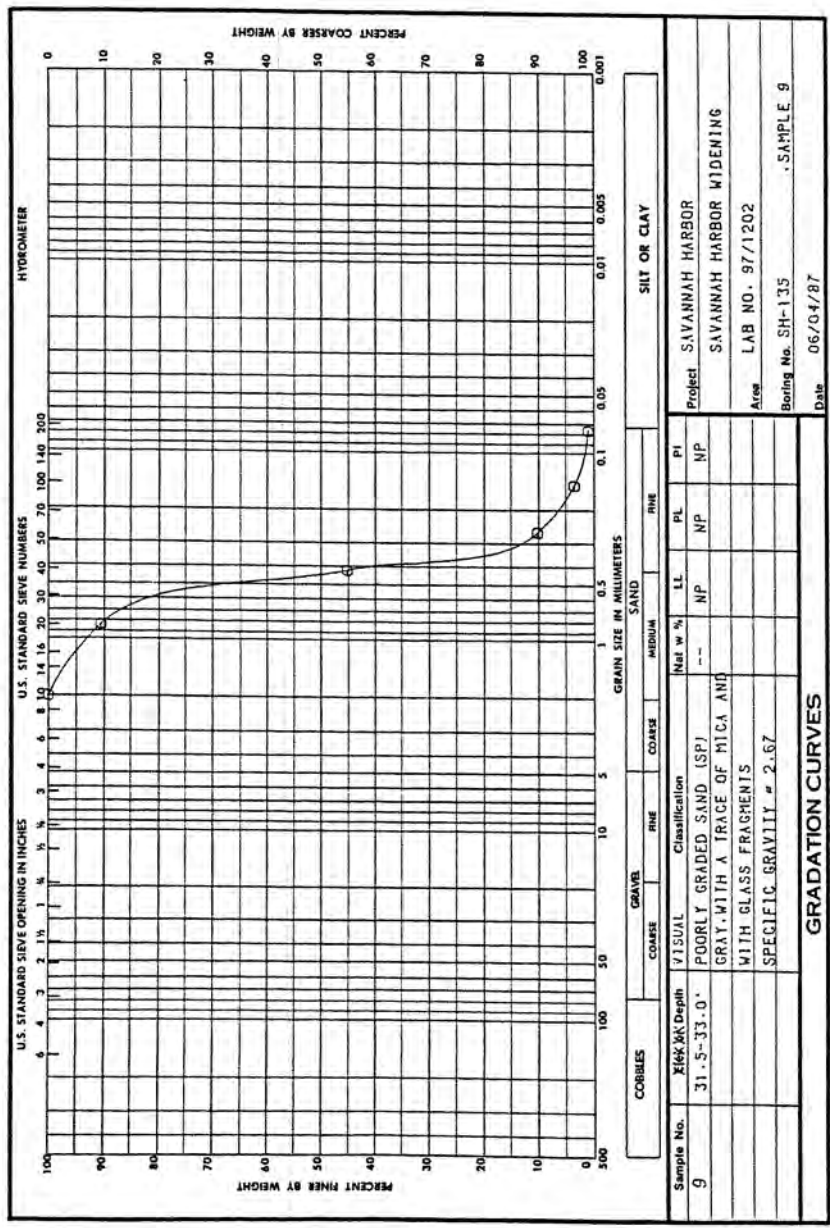
ENG 1 MAY 63 2087



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23

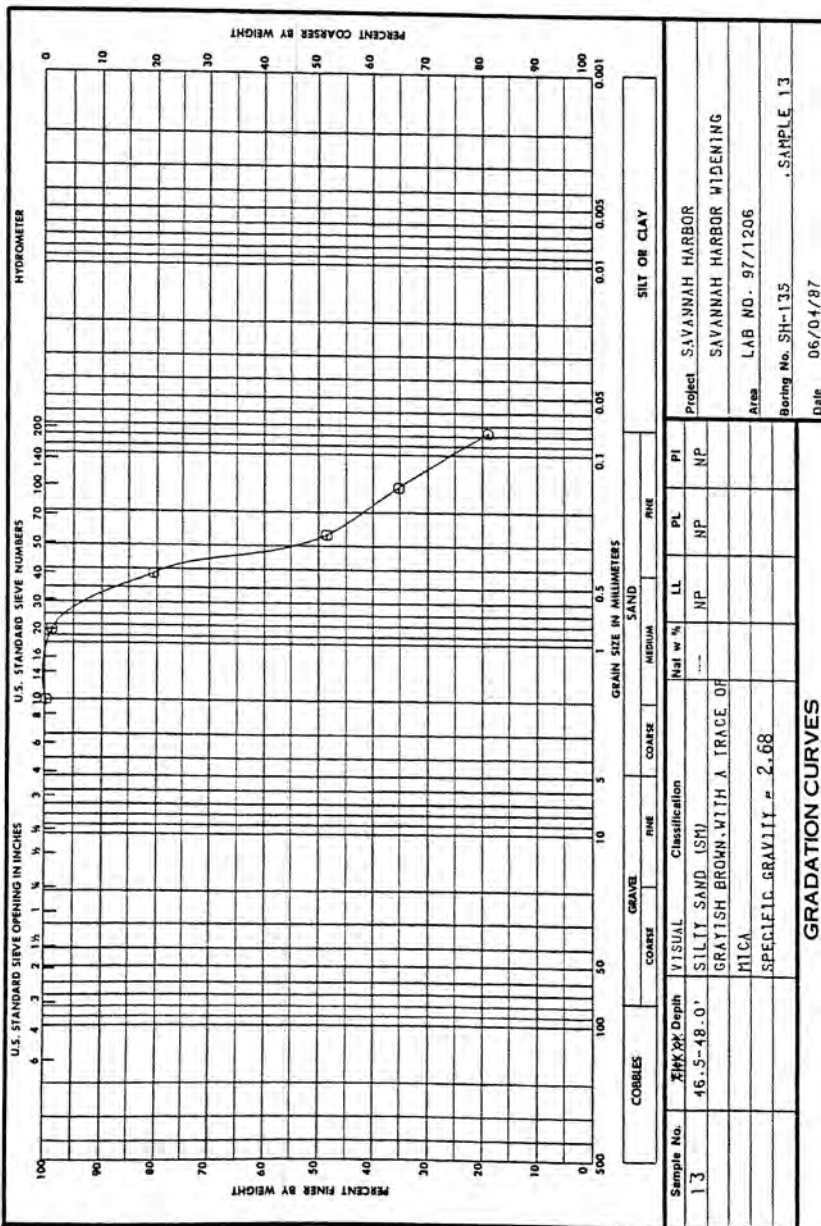




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23



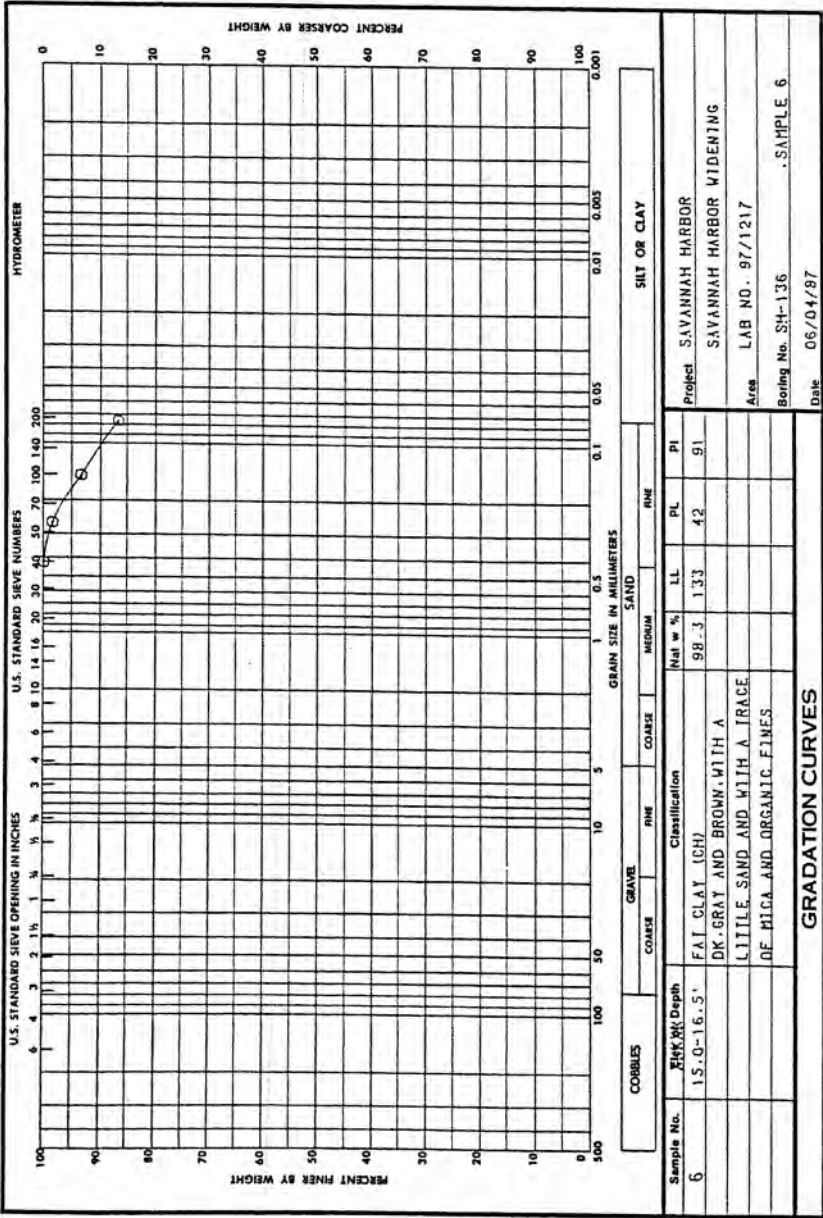
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

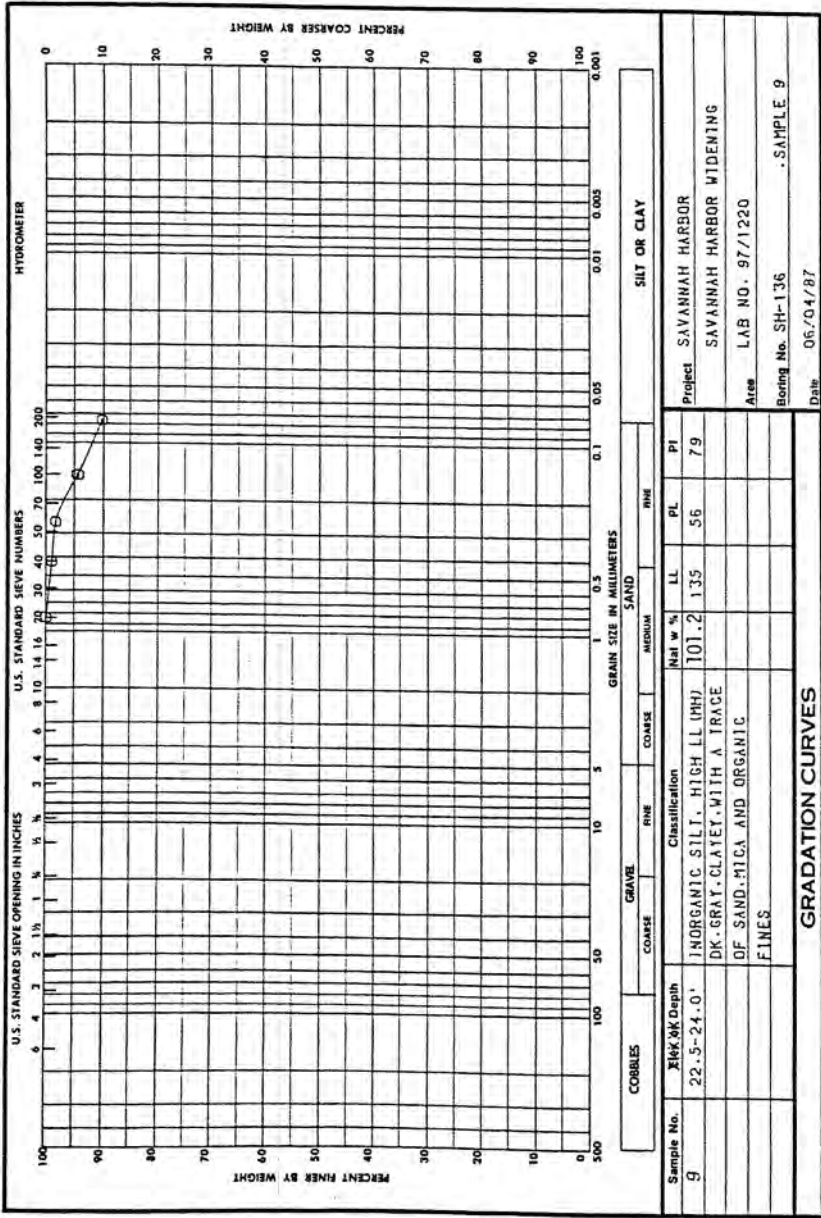
Req. No. SAS-EN-GS-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

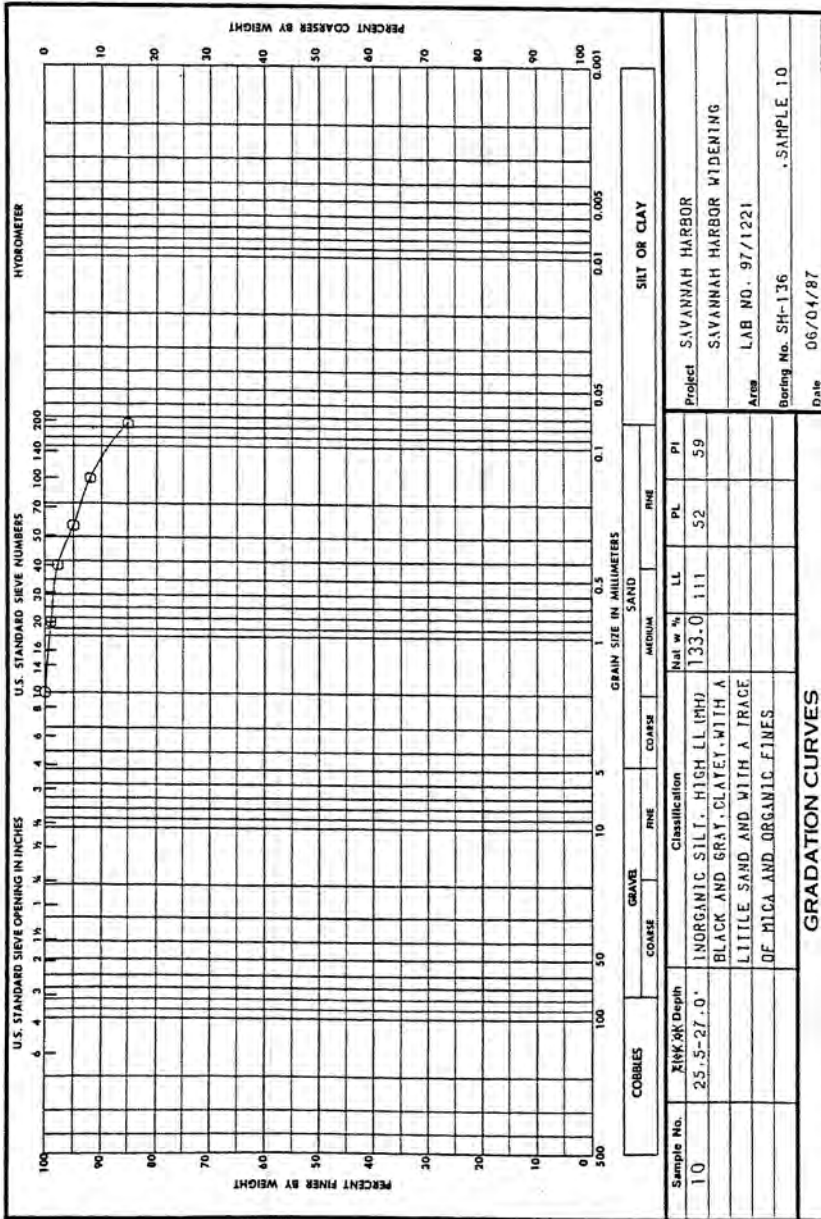


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

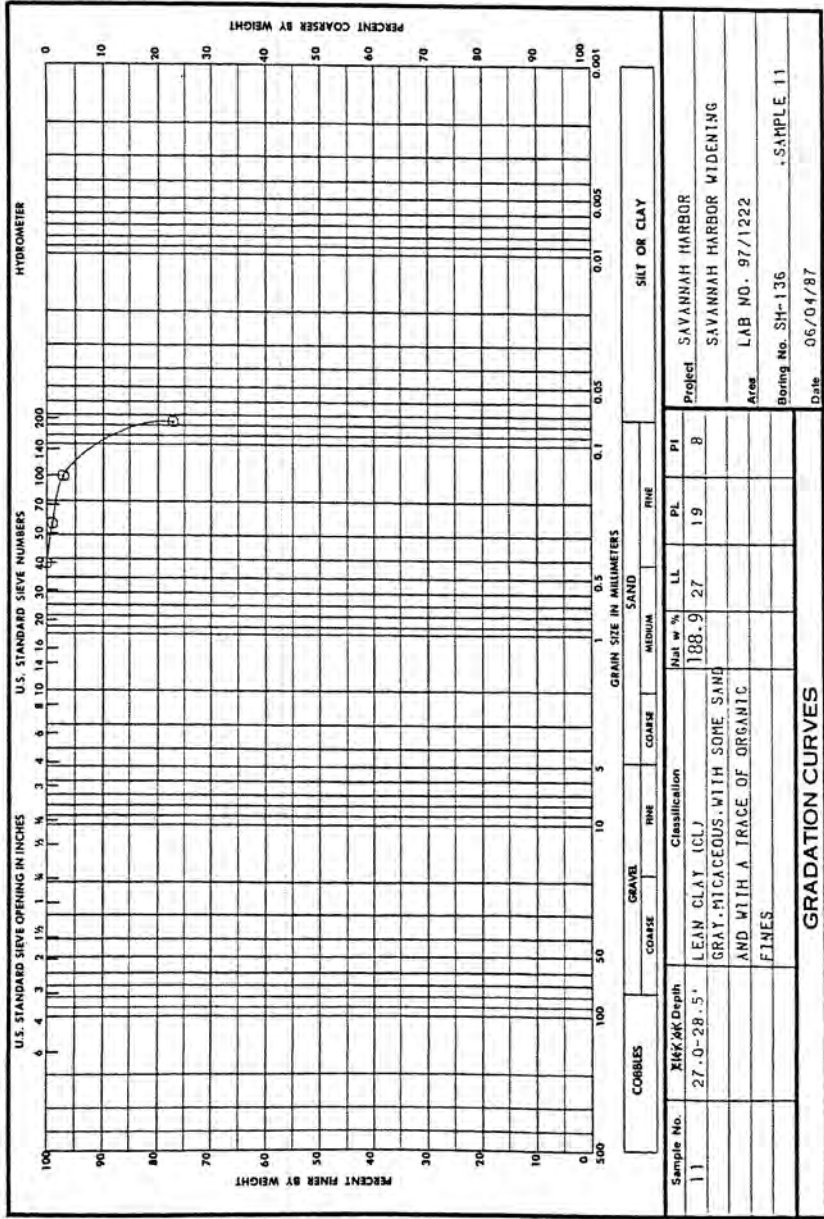


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23



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1 MAY 63

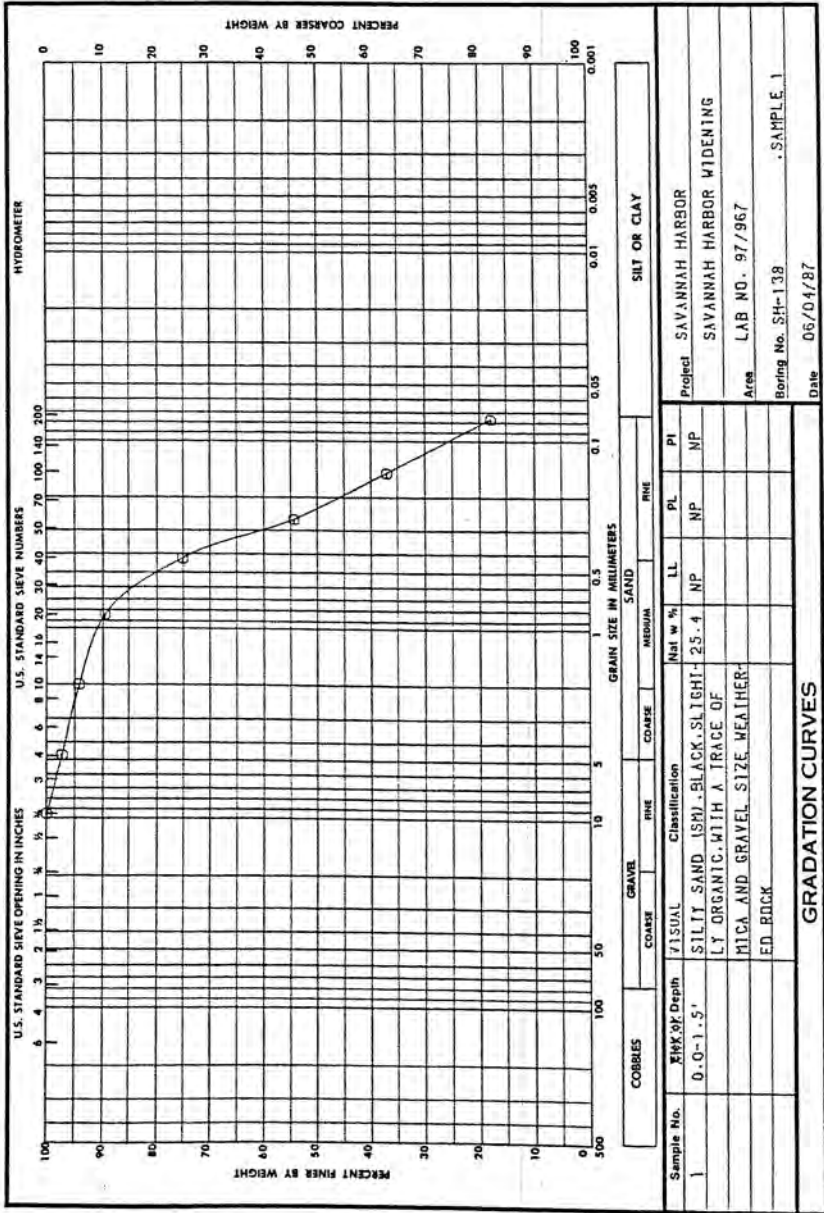




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23



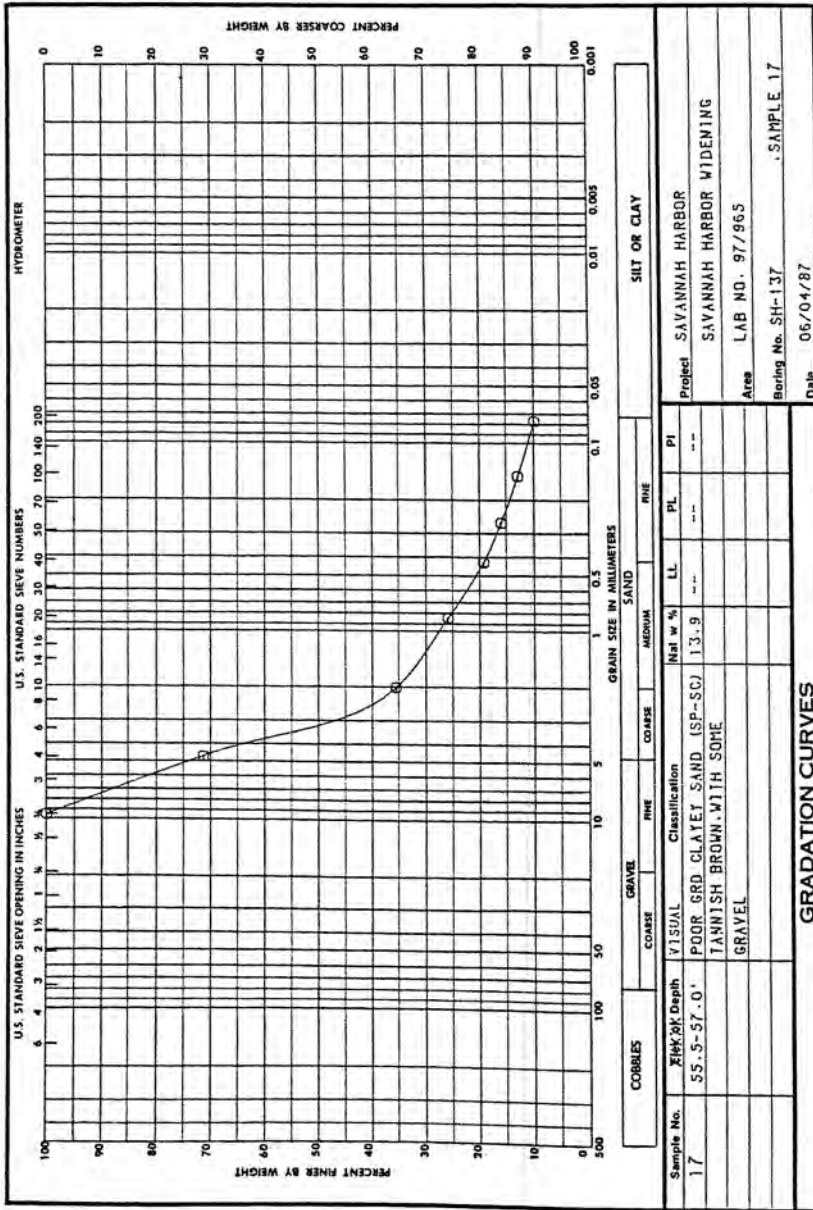
ENG FORM 1 MAY 63 2087



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

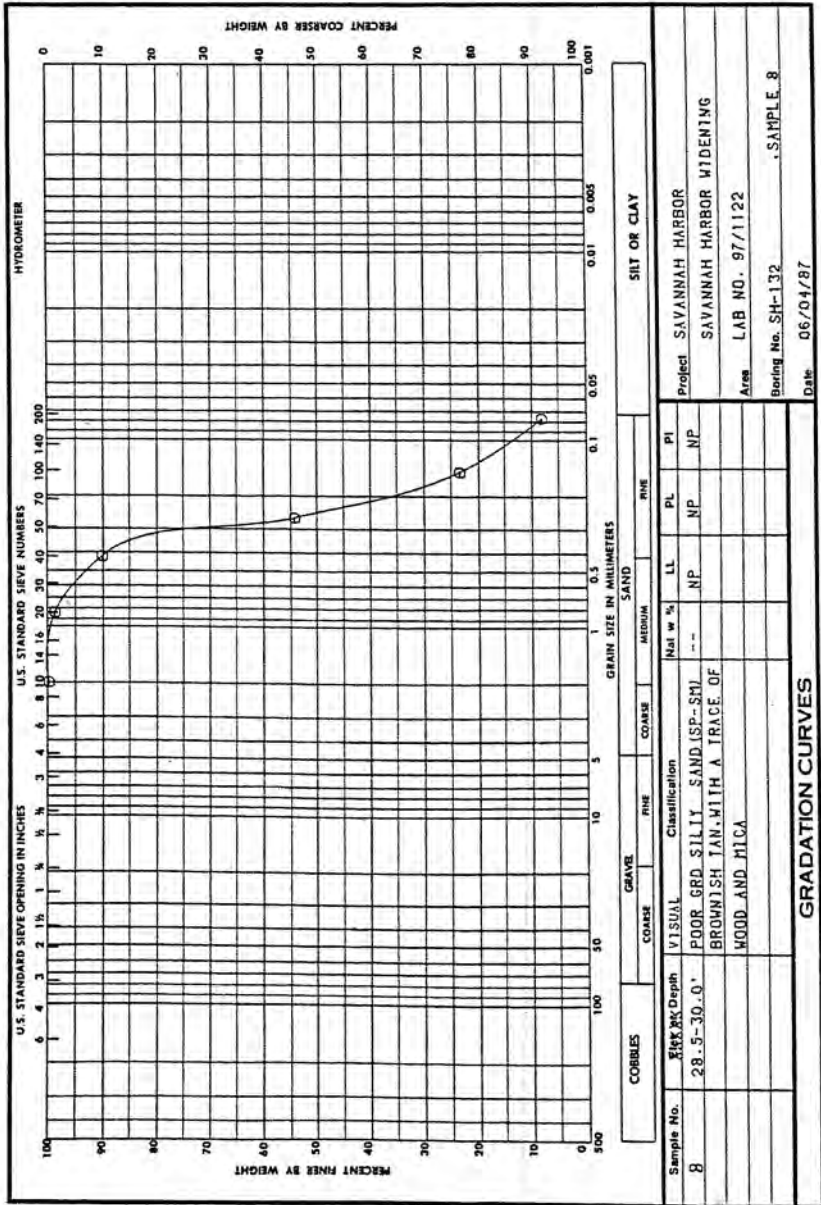
Req. No. SAS-EN-GS-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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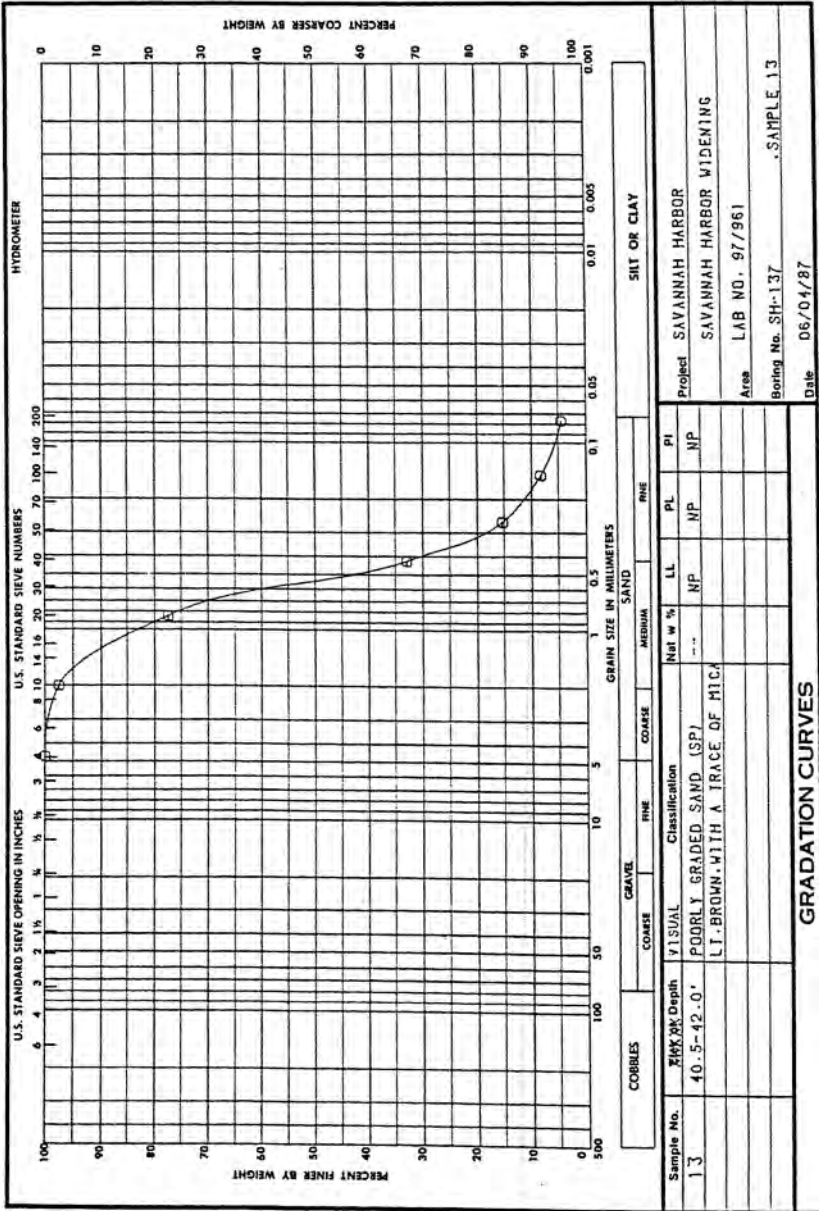


ENG FORM 2087  
1 MAY 63

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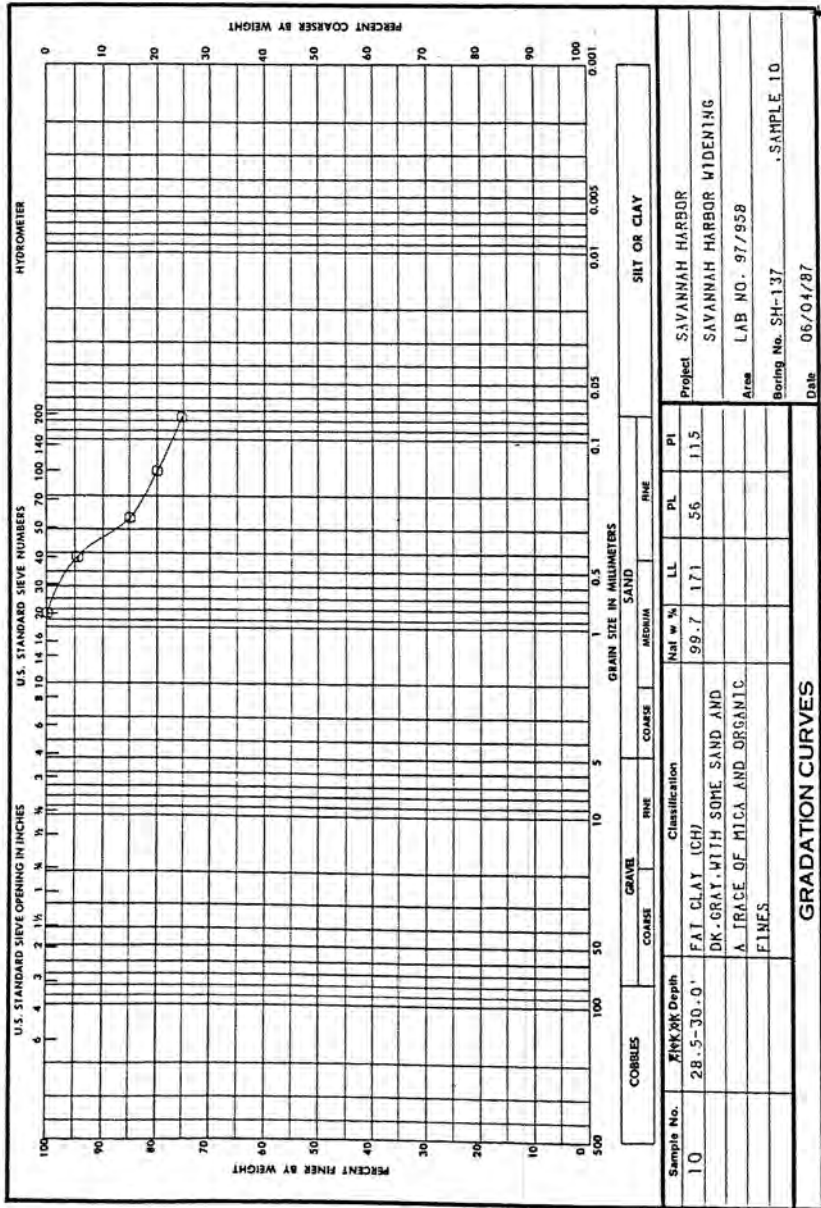


ENG FORM 2087  
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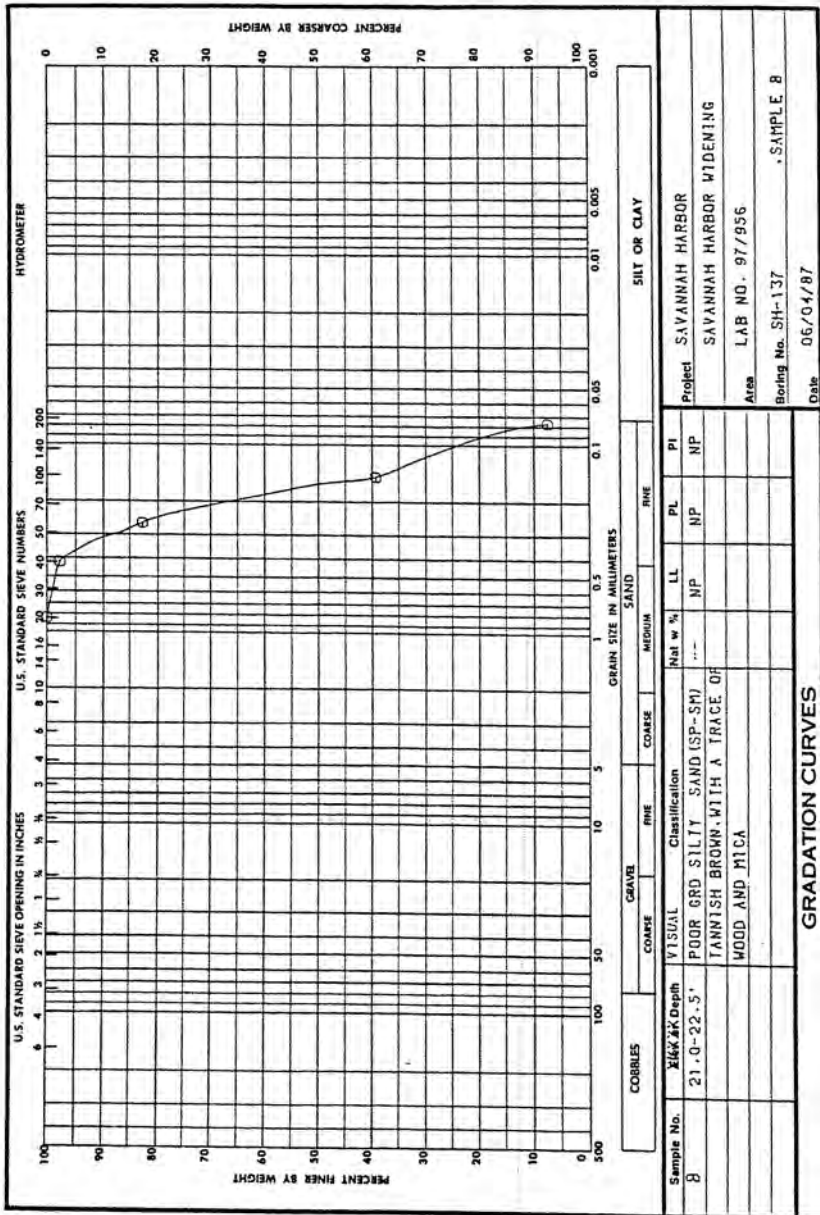


ENG FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

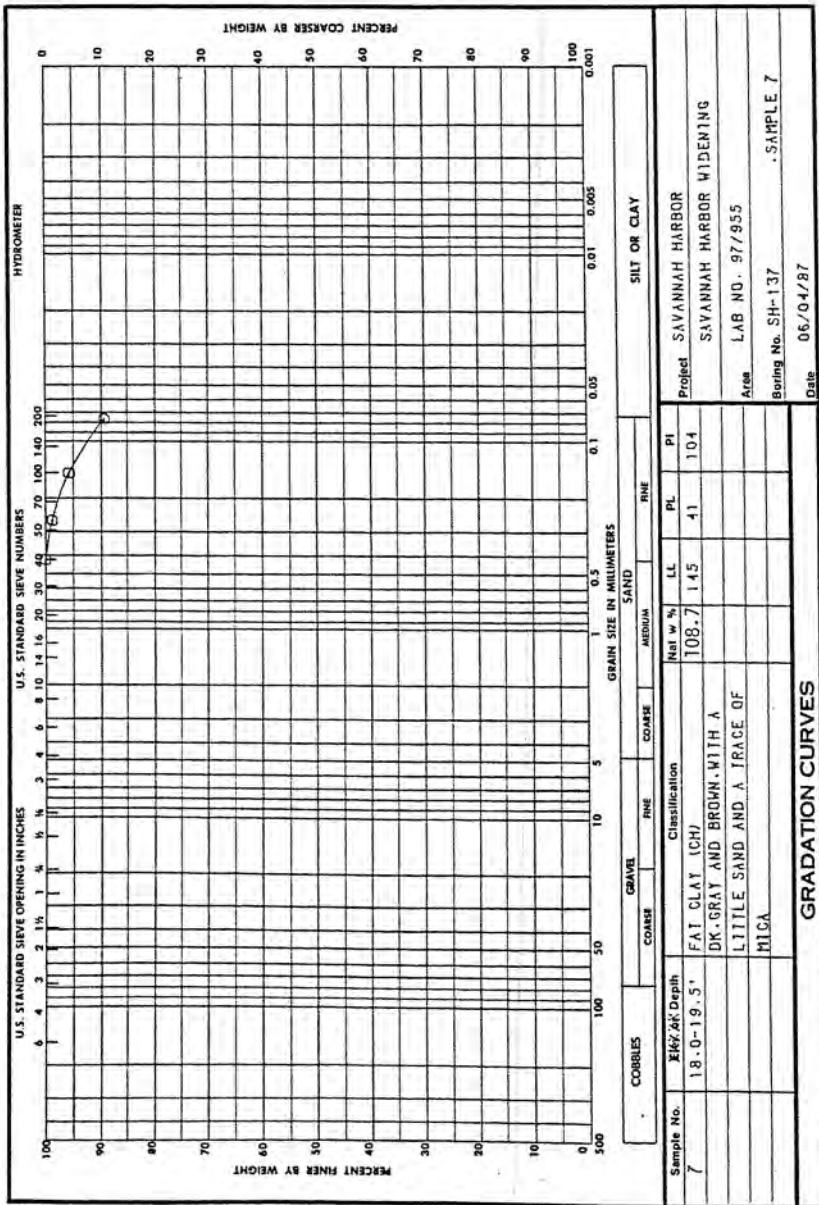
Req. No. SAS-EN-6S-87-23



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W.O. No. 5193

Req. No. SAS-EN-6S-87-23

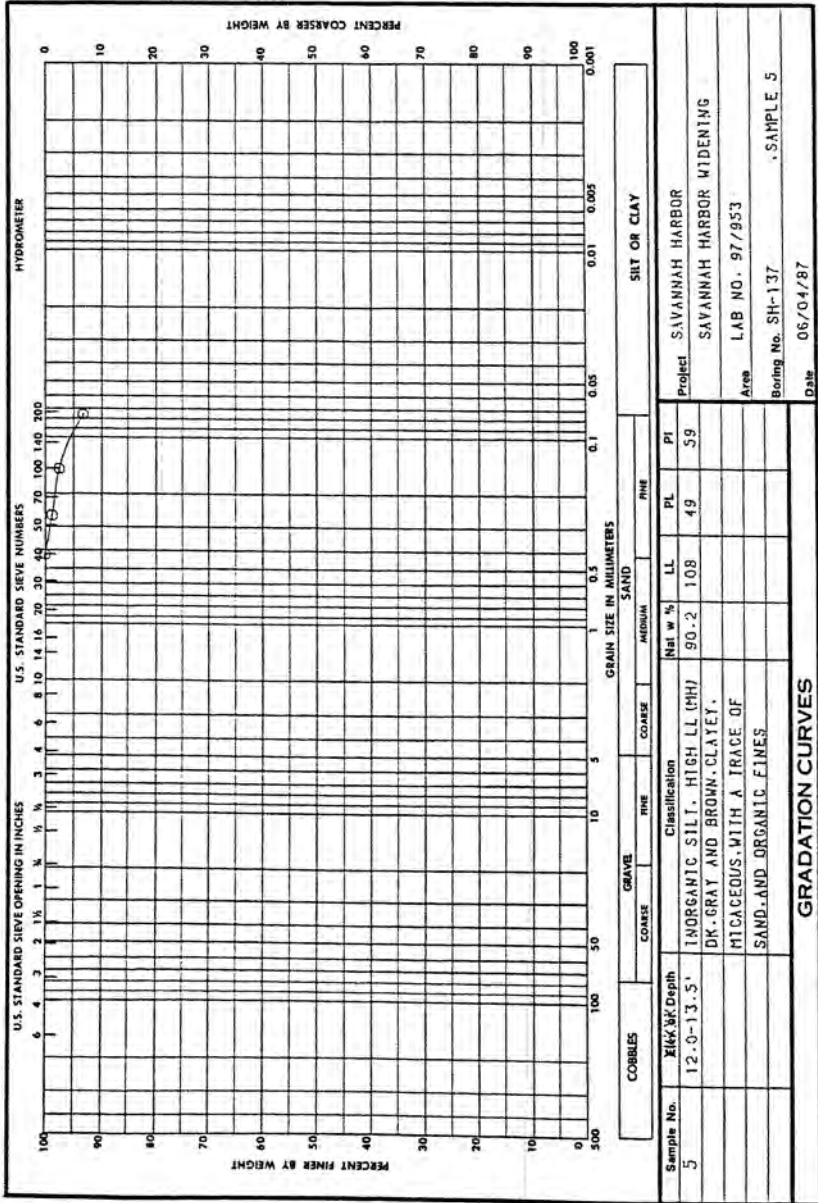


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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Req. No. SAS-EN-6S-87-23



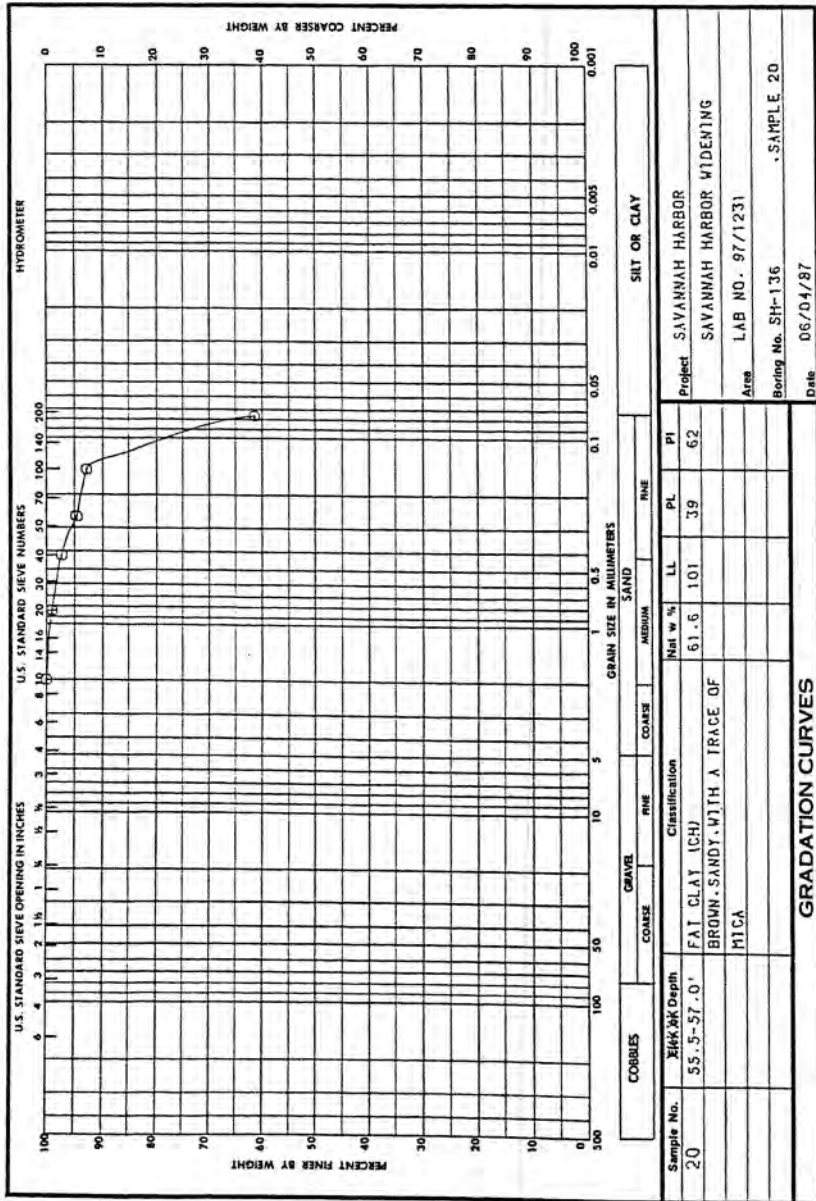
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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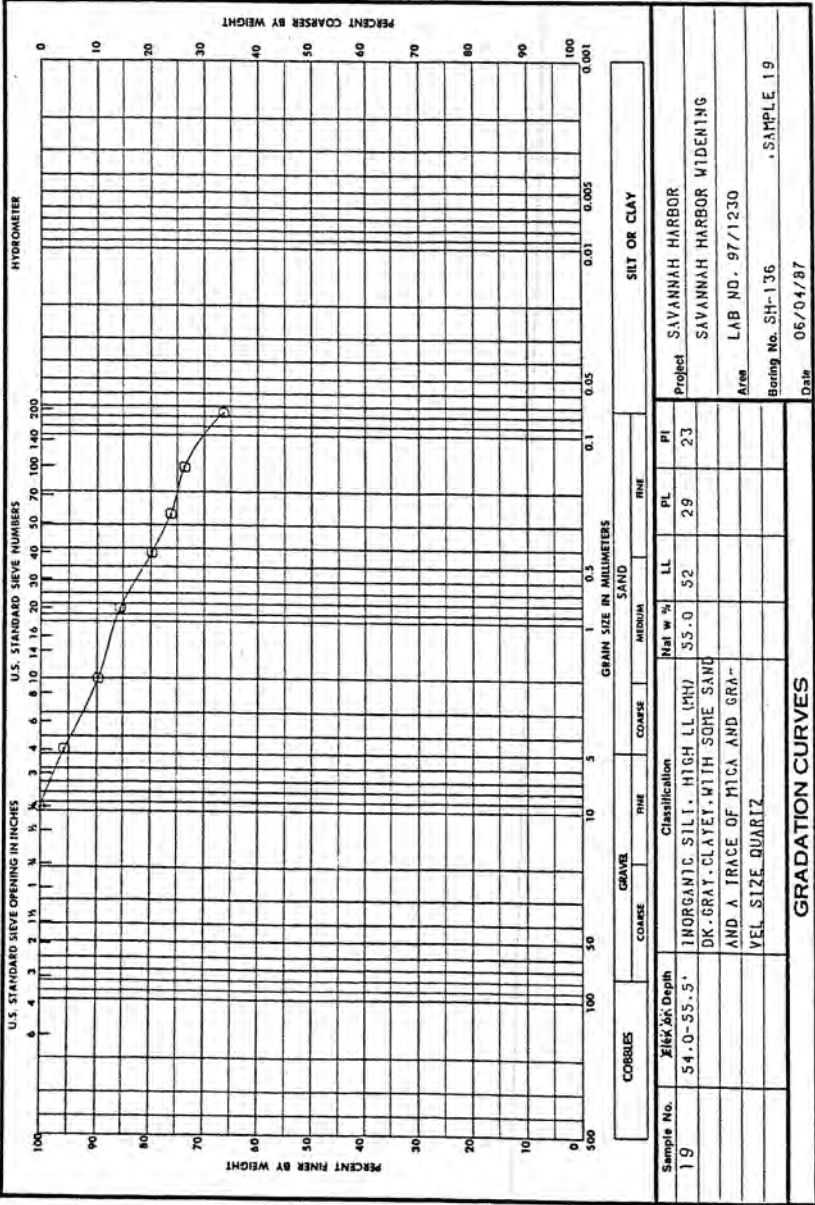
ENG FORM 2087  
1 MAY 63



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W.O. No. 5193

Req. No. SAS-EN-GS-87-23

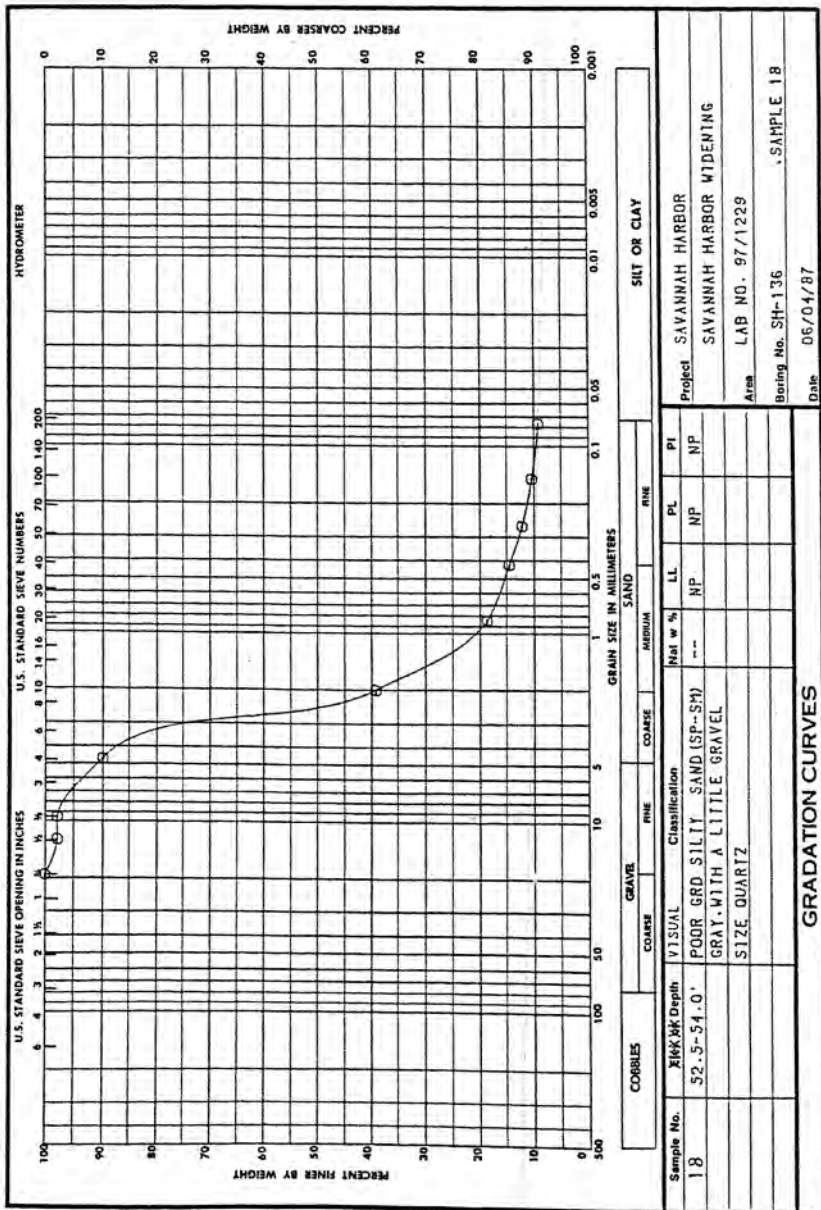


ENG FORM 1 MAY 63 2087

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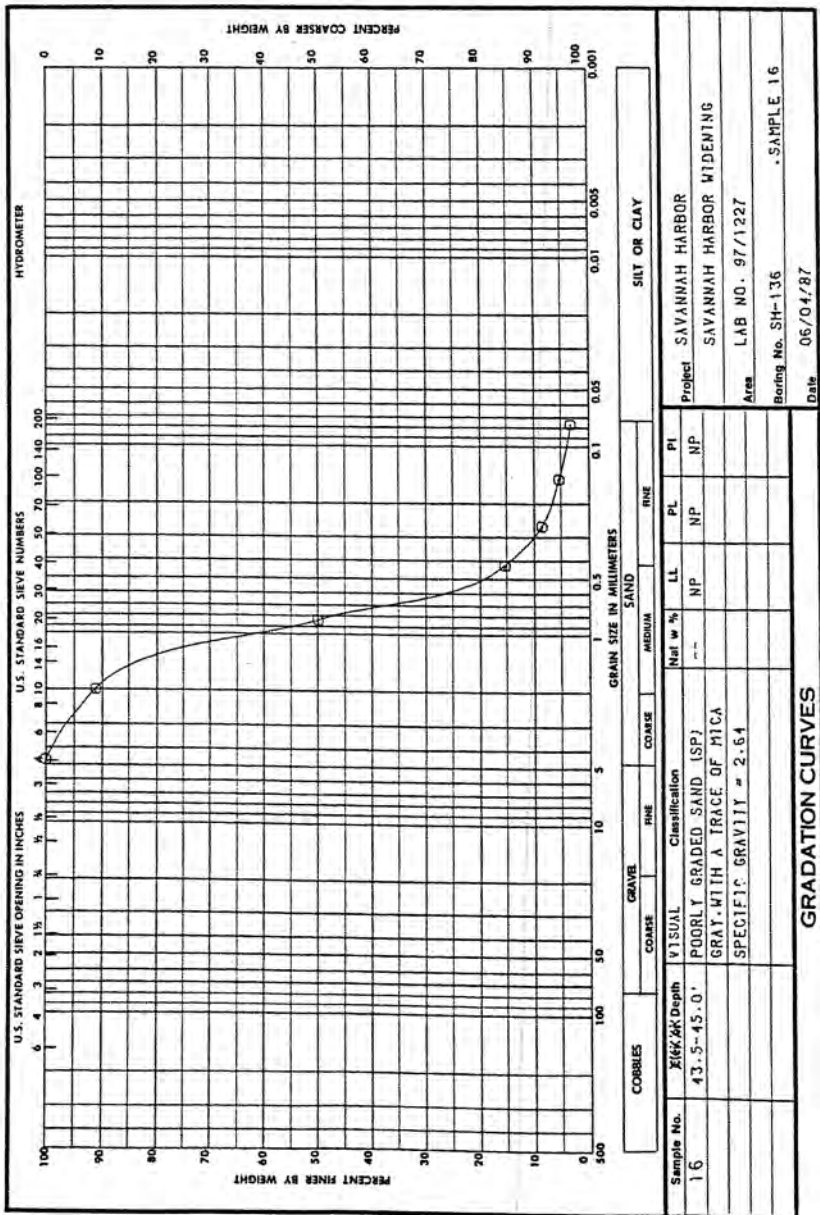


ENG FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

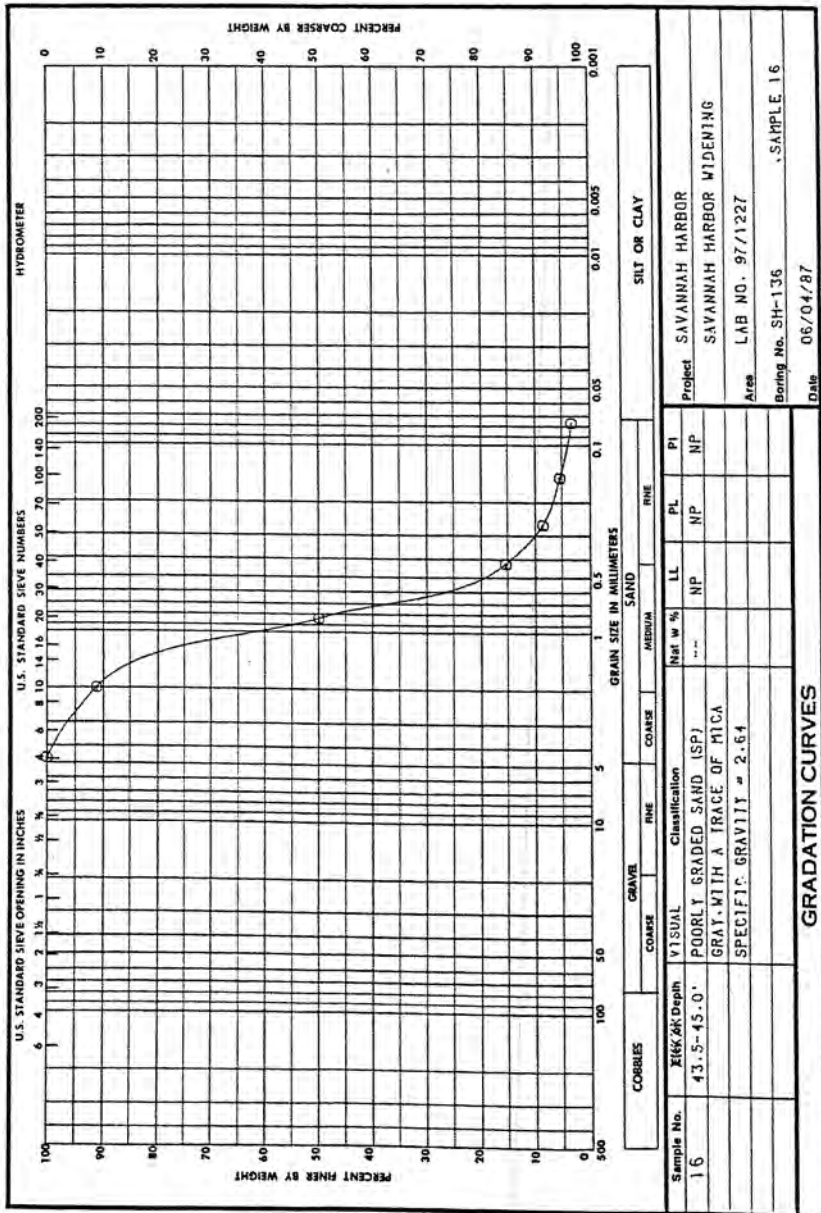


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

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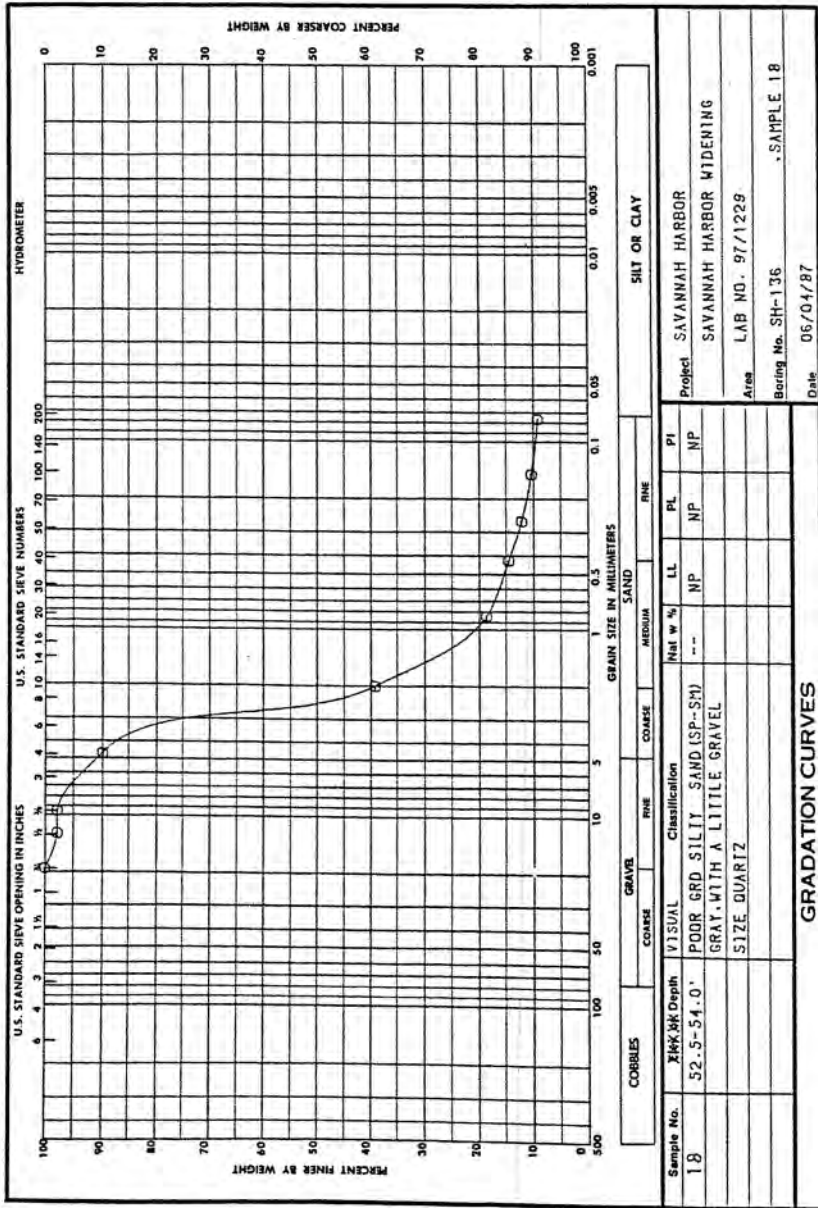


ENG FORM 1 MAY 83 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

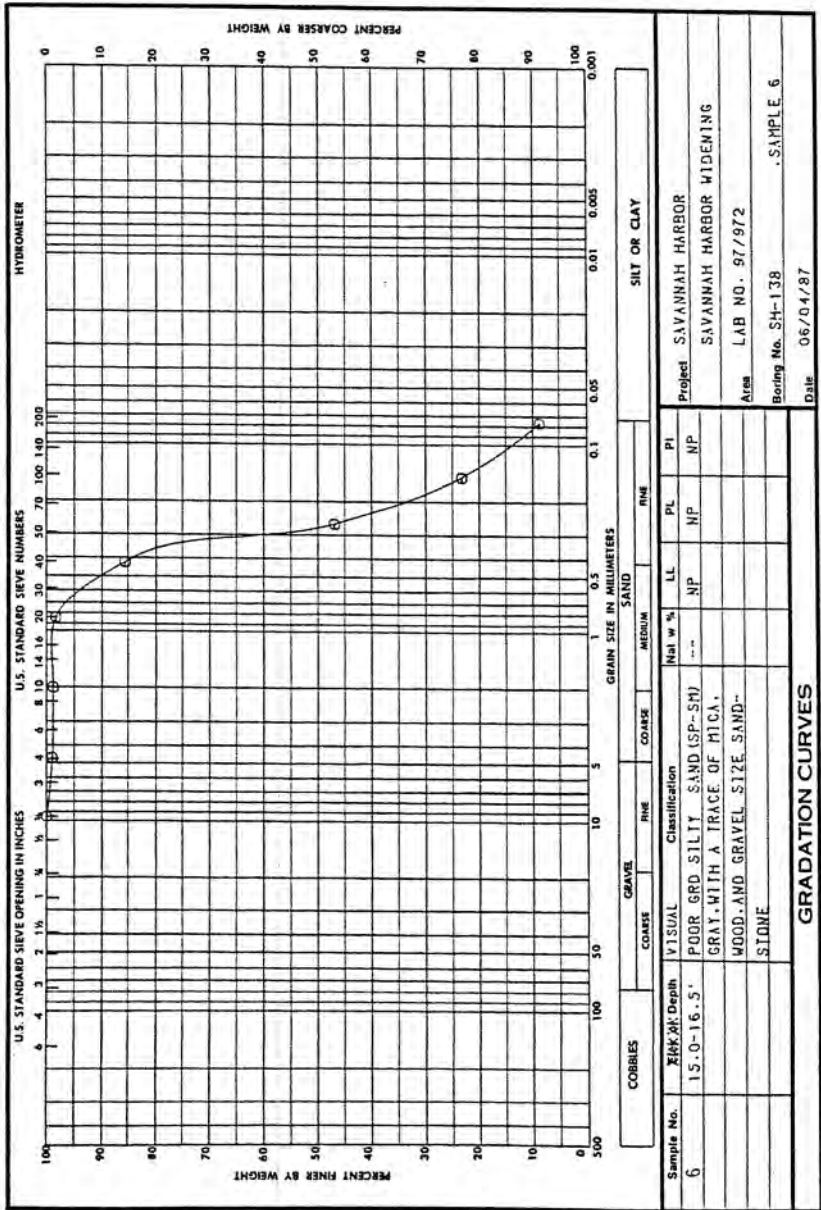


ENG FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23

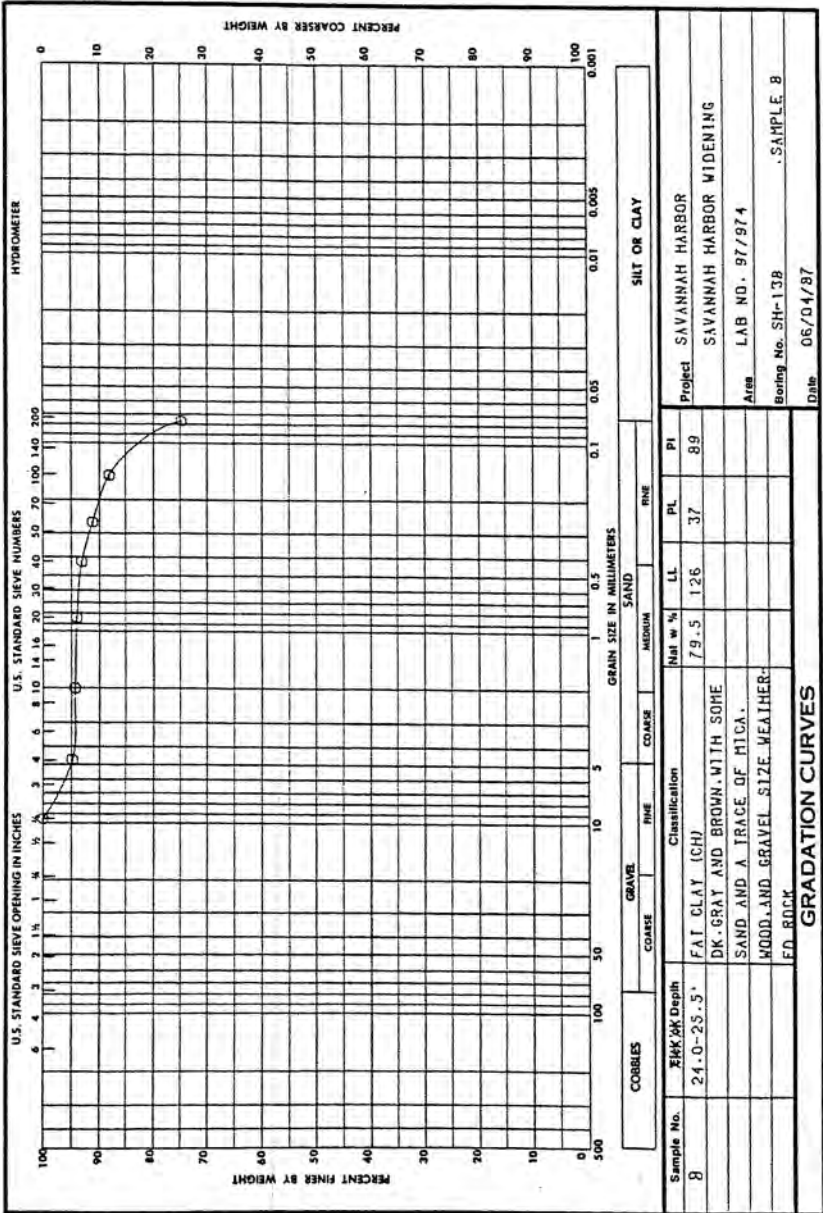


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

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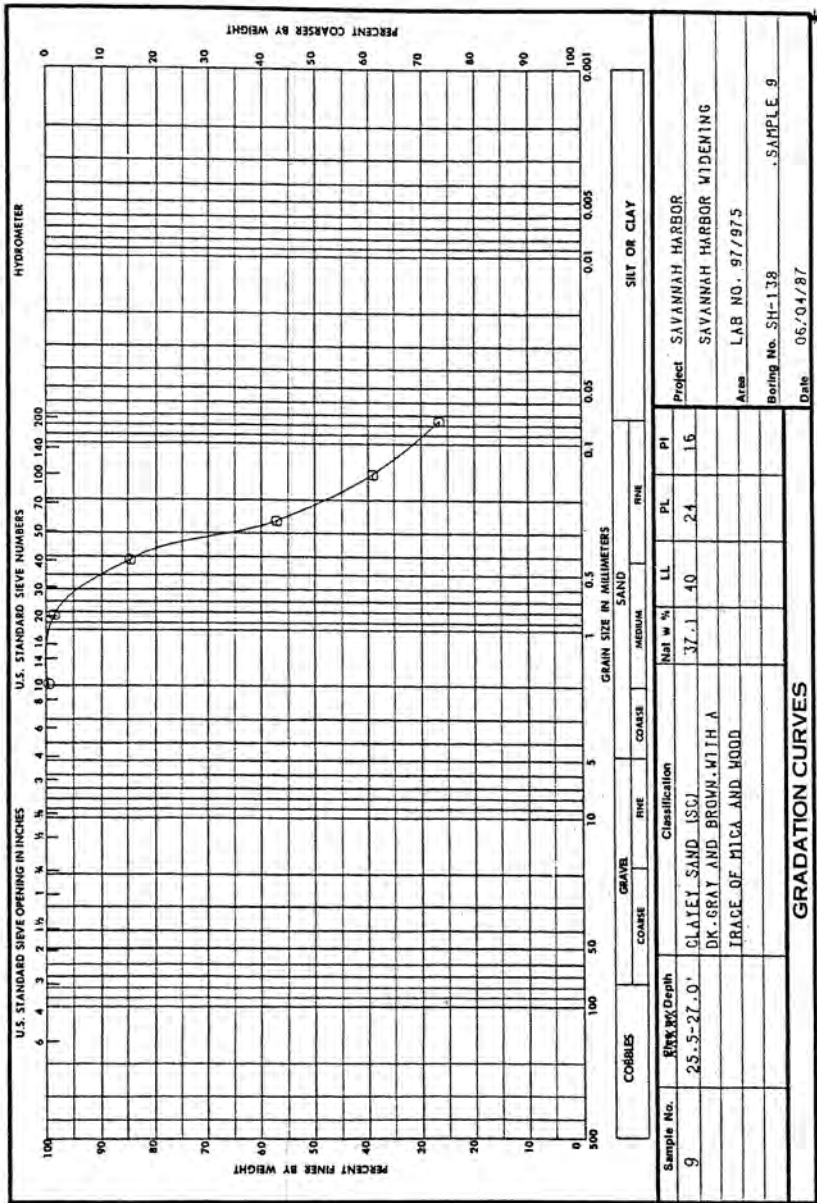
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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W.O. No. 5193

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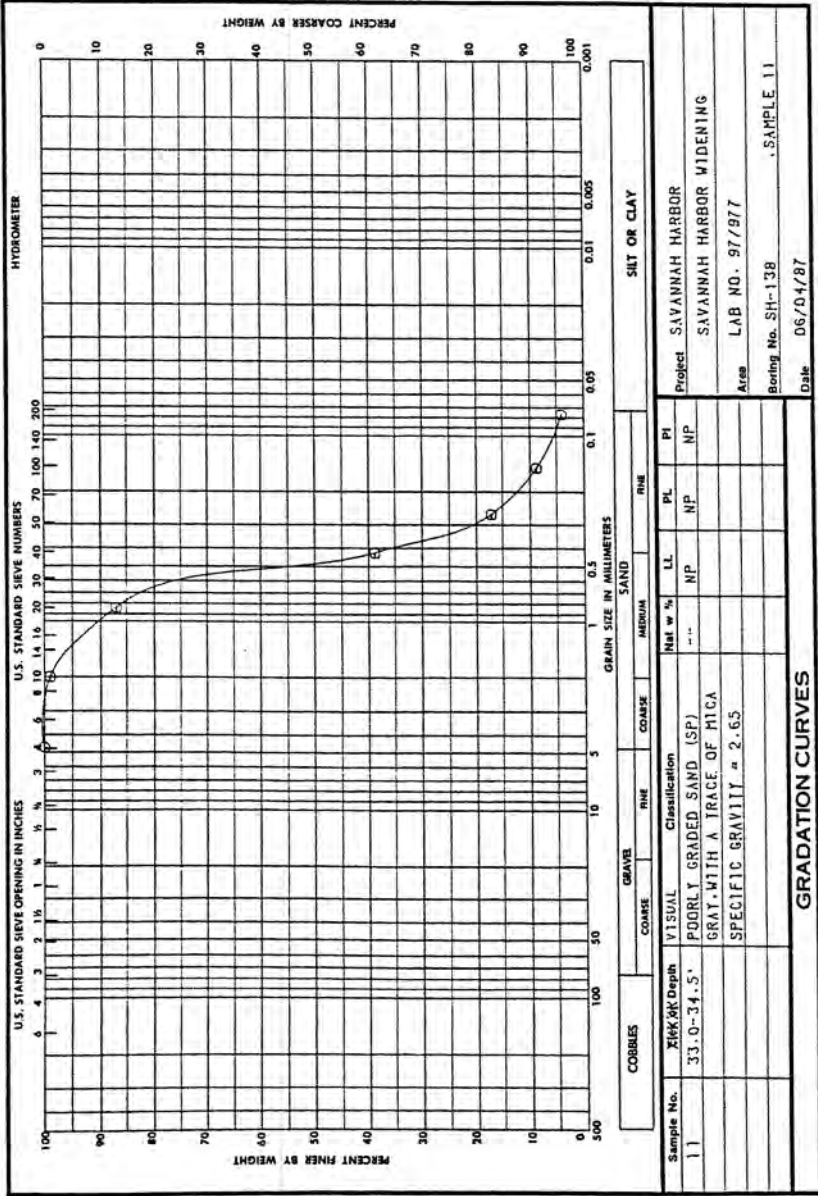




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

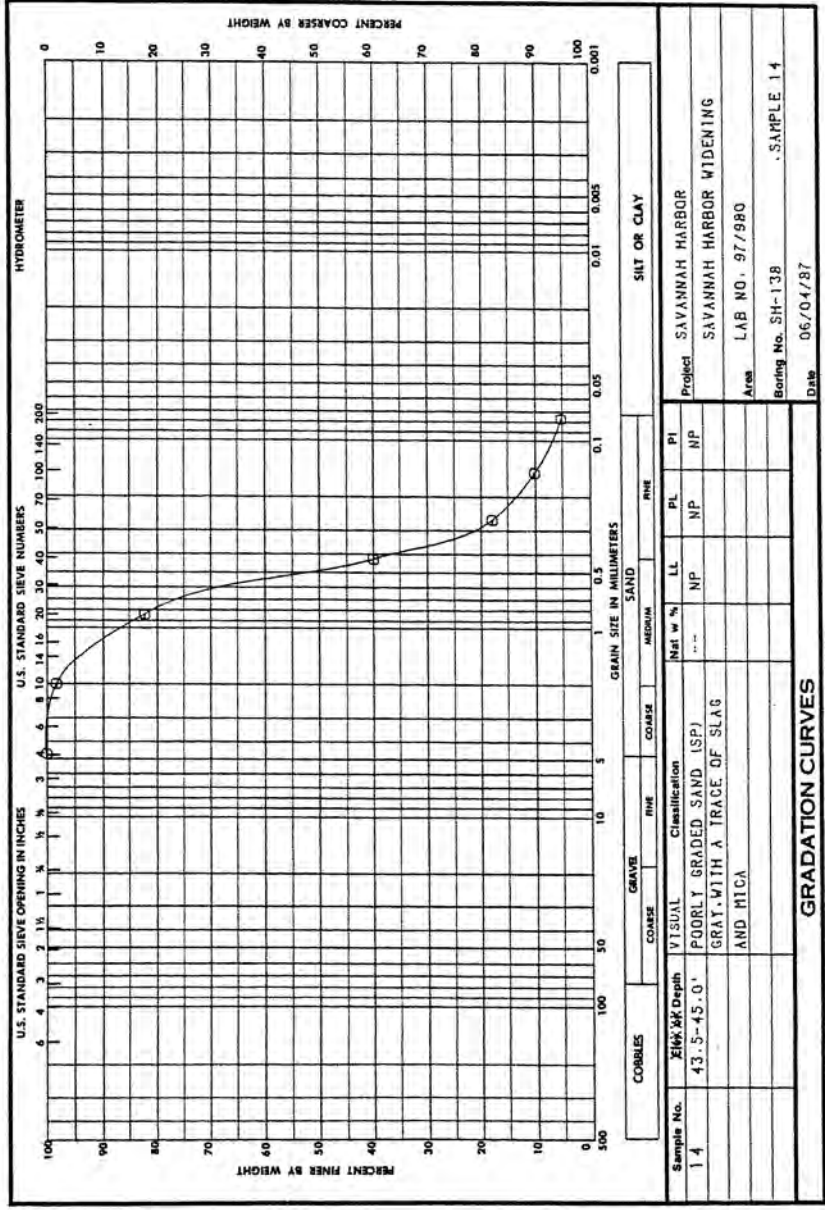
Req. No. SAS-EN-65-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

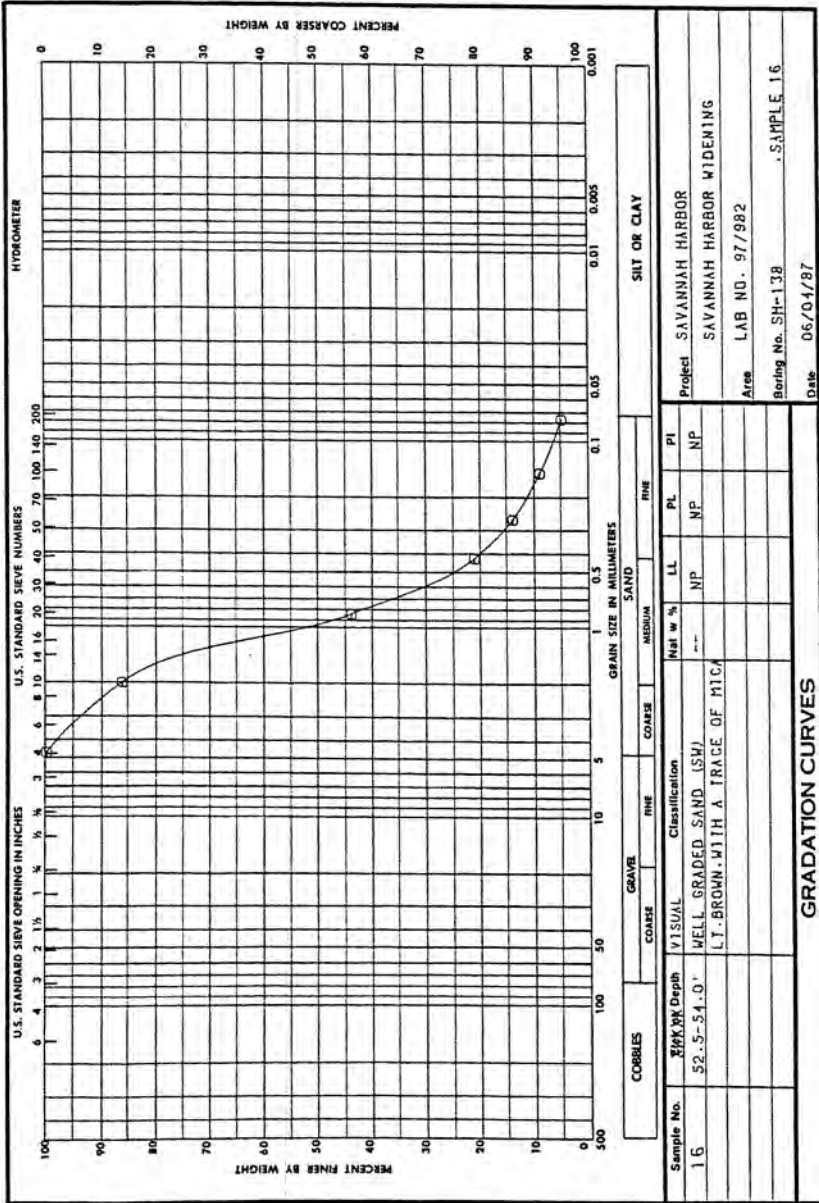
Req. No. SAS-EN-6S-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

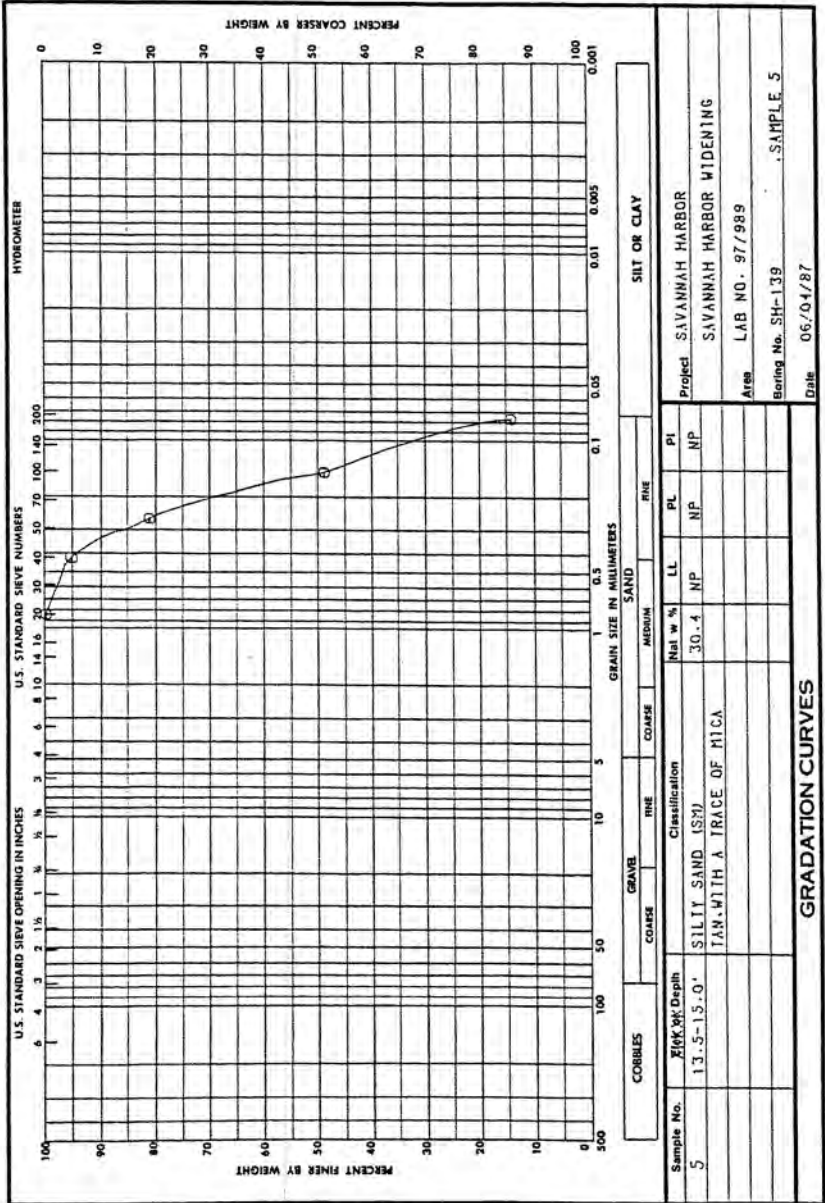


ENG FORM 2087  
1 MAY 83

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23



## GENERAL TEST REPORT (Continued)

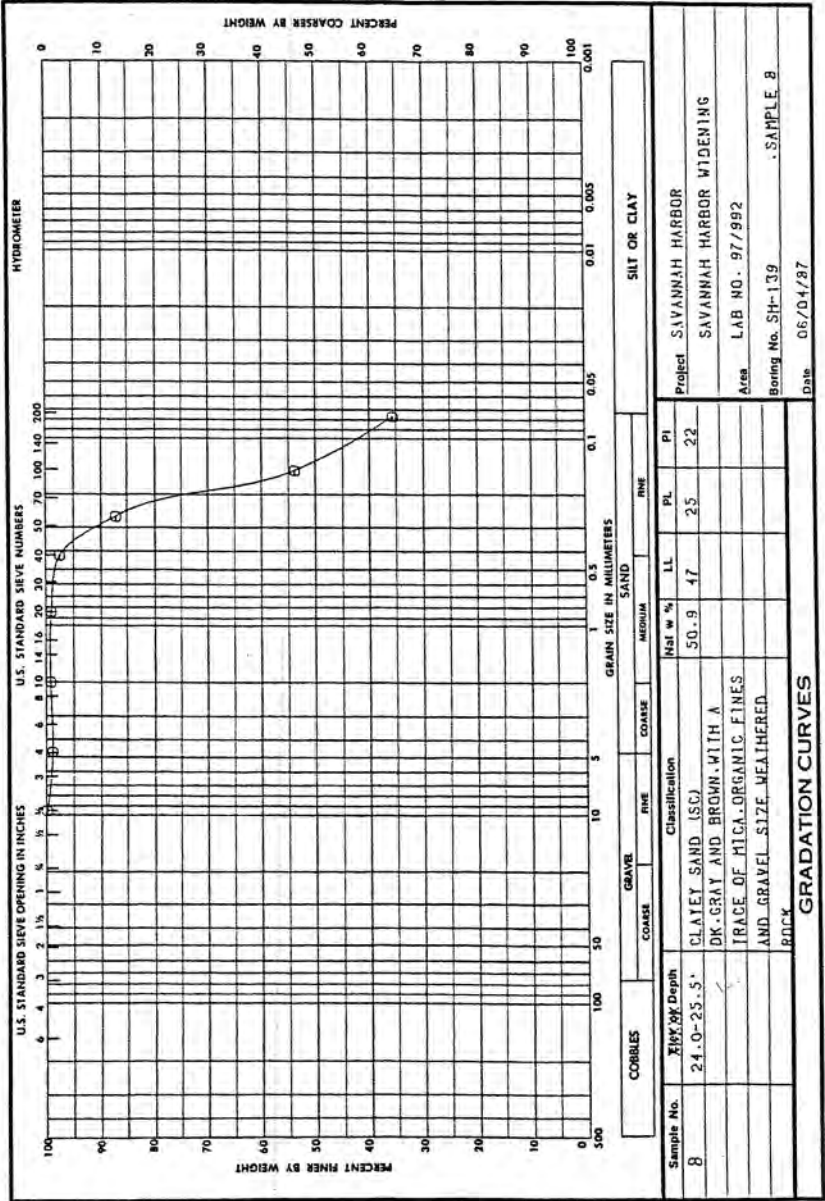
( SOILS )PROJECT Savannah Harbor  
Savannah Harbor WideningLAB NO. See BelowWORK ORDER NO. 5193DATE 9 June 1987REQ. NO. SAS EN GS 87-23

| Lab<br>No. | Hole<br>No. | Sample<br>No. | Depth<br>(ft) | Moisture<br>Content (%) |
|------------|-------------|---------------|---------------|-------------------------|
| 977        |             |               |               |                         |
| 999        | SH-139      | 15            | 46.5-48.0     | 25.1                    |
| 1022       | SH-143      | 1             | 0.0-1.5       | 19.2                    |
| 1024       | "           | 3             | 7.5-9.0       | 22.5                    |
| 1256       | SH-144      | 5             | 12.0-13.5     | 101.1                   |
| 1269       | SH-148      | 1             | 0.0-1.5       | 40.7                    |
| 1273       | "           | 5             | 12.0-13.5     | 44.4                    |
| 1274       | "           | 6             | 16.5-18.0     | 40.8                    |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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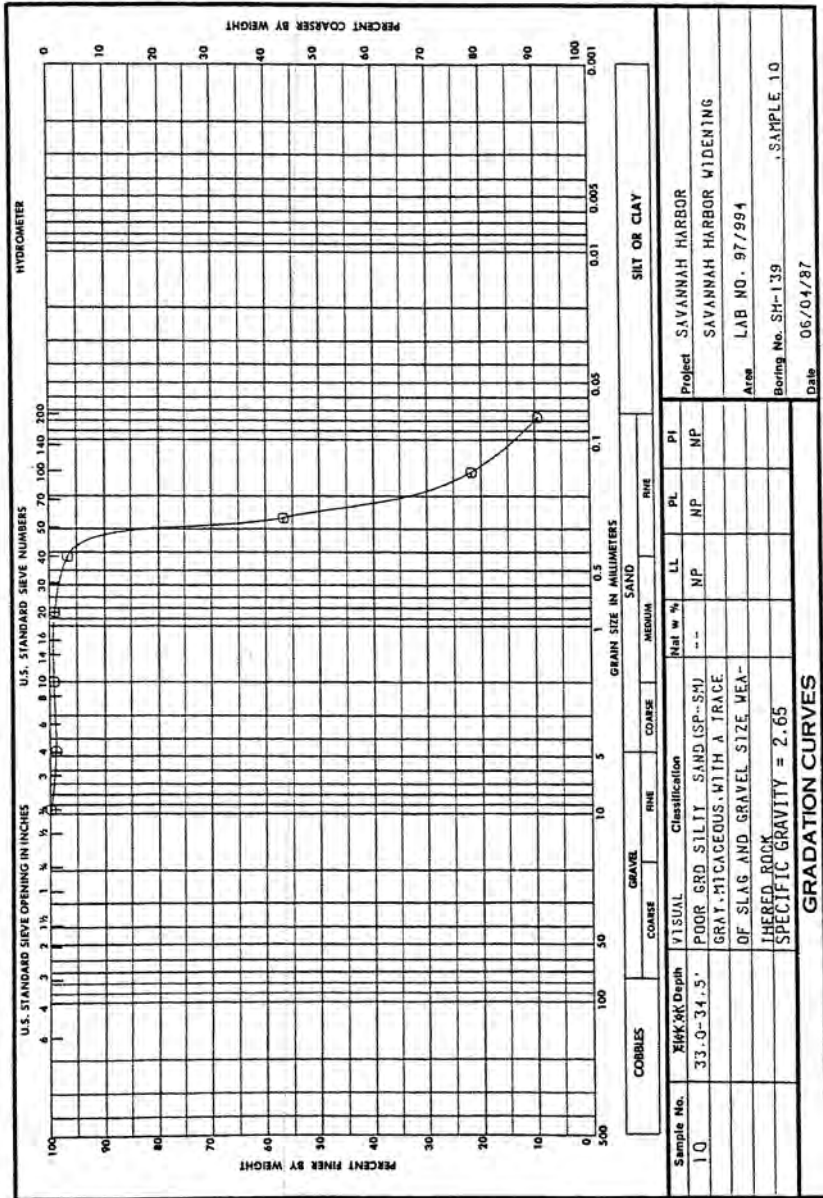
Req. No. SAS-EN-6S-87-23



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

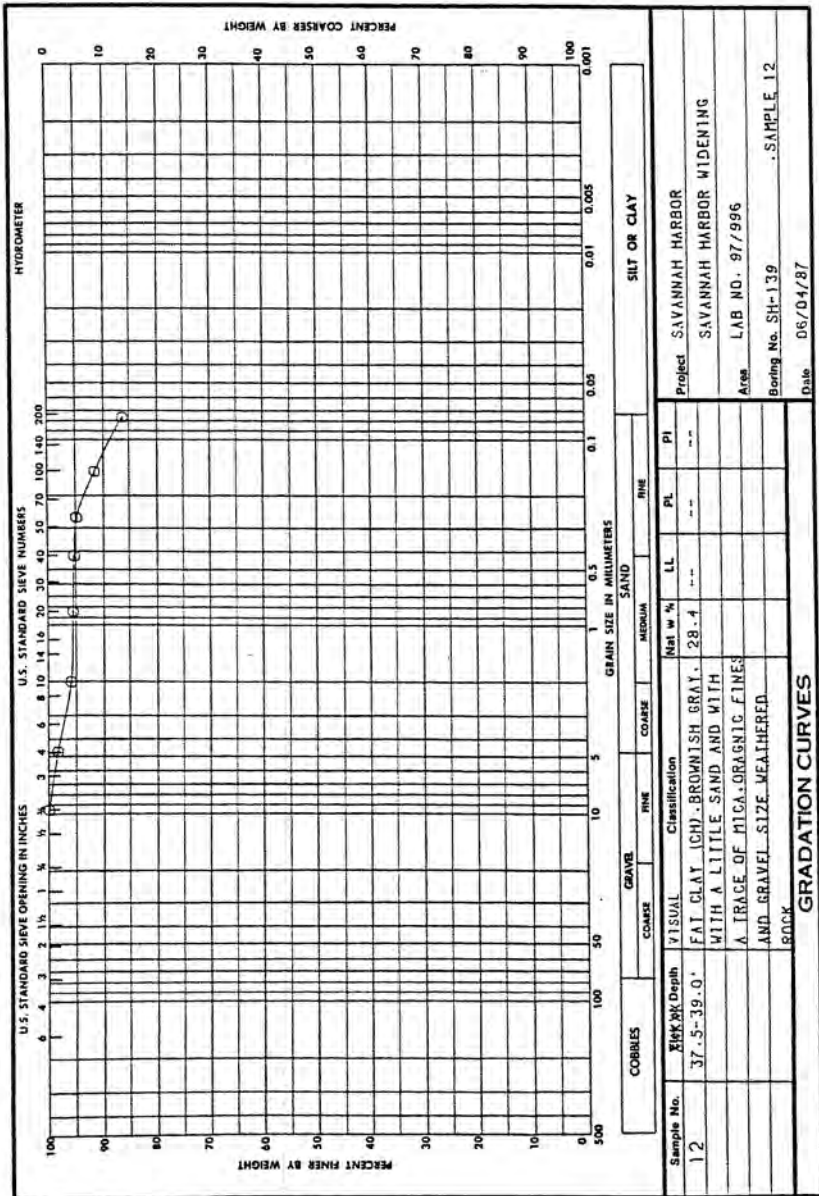


ENG FORM 2087  
1 MAY 63

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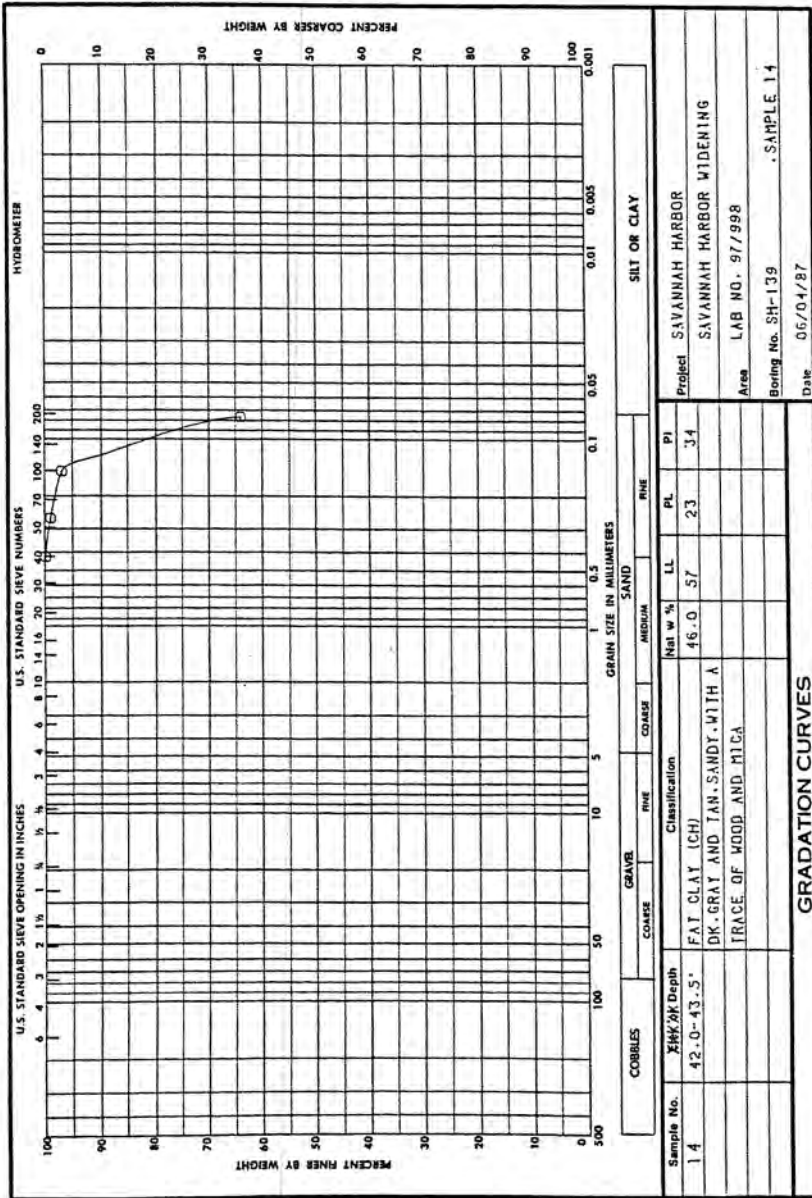
ENG FORM 1 MAY 63 2087



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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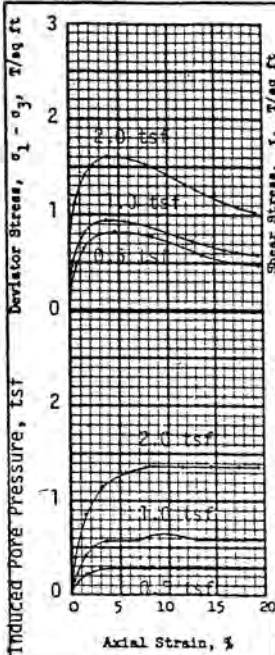




| <b>GENERAL TEST REPORT</b><br><b>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC</b><br><b>CORPS OF ENGINEERS</b><br><b>MARIETTA, GEORGIA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          | <b>DISTRICT/OFFICE</b><br>Savannah                     |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------|-------------|----------------------|----------|------------|-------------|----------------------|-----|--|--|--|--|------|--------|---|----------|-------|------|---|---|-----------|------|------|---|-----|-----------|------|------|--------|----|---------|------|------|---|----|---------|-------|------|---|---|-----------|------|------|---|---|-----------|------|------|---|----|-----------|--------|------|--------|---|-----------|------|------|--------|---|---------|------|------|---|---|-----------|------|------|---|----|-----------|--------|
| <b>PROJECT</b><br>Savannah Harbor<br>Savannah Harbor Widening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          | <b>CONTRACT NO.</b><br>--                              |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | <b>DATE REPORTED</b><br>8 April 1987                   |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | <b>WORK ORDER NO.</b><br>5193                          |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>TYPE SAMPLE</b> SOILS:<br>Jar Samples of Disturbed Soils                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          | <b>REQN. NO.</b><br>SAS-EN-GS-87-23                    |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>SOURCE</b><br>HOLE NO: SH -141, 145, 146 and 147                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          | <b>BASE UNIT COST</b><br>--                            |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>FOR USE AS</b><br>Investigation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          | <b>DATE SAMPLE RECEIVED</b><br>27 Feb thru 16 Mar 1987 |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>TESTED FOR</b><br>Lab Classification and Field Moisture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | <b>LAB NO.</b><br>97/1007-1088                         |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <input checked="" type="checkbox"/> <b>MEETS SPECIFICATIONS</b> </div> <div style="text-align: center;"> <b>N/A</b> </div> <div style="text-align: center;"> <input type="checkbox"/> <b>FAILS SPECIFICATIONS (See below)</b> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                                                        |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Lab. No.</th> <th style="text-align: left;">Hole No.</th> <th style="text-align: left;">Sample No.</th> <th style="text-align: left;">Depth (Ft.)</th> <th style="text-align: left;">Moisture Content (%)</th> </tr> </thead> <tbody> <tr><td>97/</td><td></td><td></td><td></td><td></td></tr> <tr><td>1007</td><td>SH-141</td><td>5</td><td>9.0/10.5</td><td>90.8*</td></tr> <tr><td>1008</td><td>"</td><td>6</td><td>13.5/15.0</td><td>66.1</td></tr> <tr><td>1018</td><td>"</td><td>16A</td><td>52.5/53.5</td><td>39.0</td></tr> <tr><td>1044</td><td>SH-145</td><td>3A</td><td>6.0/7.0</td><td>28.4</td></tr> <tr><td>1045</td><td>"</td><td>3B</td><td>7.0/7.5</td><td>91.3*</td></tr> <tr><td>1047</td><td>"</td><td>5</td><td>13.5/15.0</td><td>18.9</td></tr> <tr><td>1050</td><td>"</td><td>7</td><td>21.0/22.5</td><td>94.4</td></tr> <tr><td>1052</td><td>"</td><td>9A</td><td>27.0/27.5</td><td>103.3*</td></tr> <tr><td>1065</td><td>SH-146</td><td>4</td><td>13.5/15.0</td><td>84.5</td></tr> <tr><td>1079</td><td>SH-147</td><td>2</td><td>3.0/4.5</td><td>29.3</td></tr> <tr><td>1082</td><td>"</td><td>5</td><td>12.0/15.0</td><td>96.7</td></tr> <tr><td>1088</td><td>"</td><td>11</td><td>40.5/42.0</td><td>134.2*</td></tr> </tbody> </table> |          |                                                        |             | Lab. No.             | Hole No. | Sample No. | Depth (Ft.) | Moisture Content (%) | 97/ |  |  |  |  | 1007 | SH-141 | 5 | 9.0/10.5 | 90.8* | 1008 | " | 6 | 13.5/15.0 | 66.1 | 1018 | " | 16A | 52.5/53.5 | 39.0 | 1044 | SH-145 | 3A | 6.0/7.0 | 28.4 | 1045 | " | 3B | 7.0/7.5 | 91.3* | 1047 | " | 5 | 13.5/15.0 | 18.9 | 1050 | " | 7 | 21.0/22.5 | 94.4 | 1052 | " | 9A | 27.0/27.5 | 103.3* | 1065 | SH-146 | 4 | 13.5/15.0 | 84.5 | 1079 | SH-147 | 2 | 3.0/4.5 | 29.3 | 1082 | " | 5 | 12.0/15.0 | 96.7 | 1088 | " | 11 | 40.5/42.0 | 134.2* |
| Lab. No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Hole No. | Sample No.                                             | Depth (Ft.) | Moisture Content (%) |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 97/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                        |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1007                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SH-141   | 5                                                      | 9.0/10.5    | 90.8*                |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1008                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 6                                                      | 13.5/15.0   | 66.1                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 16A                                                    | 52.5/53.5   | 39.0                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1044                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SH-145   | 3A                                                     | 6.0/7.0     | 28.4                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1045                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 3B                                                     | 7.0/7.5     | 91.3*                |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1047                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 5                                                      | 13.5/15.0   | 18.9                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1050                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 7                                                      | 21.0/22.5   | 94.4                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1052                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 9A                                                     | 27.0/27.5   | 103.3*               |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1065                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SH-146   | 4                                                      | 13.5/15.0   | 84.5                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1079                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SH-147   | 2                                                      | 3.0/4.5     | 29.3                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1082                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 5                                                      | 12.0/15.0   | 96.7                 |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| 1088                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | "        | 11                                                     | 40.5/42.0   | 134.2*               |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>REMARKS:</b><br>*See lab classification data on ENG Form 2087.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                                                        |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>REPORTED BY</b> <input type="checkbox"/> PHONE <input type="checkbox"/> WIRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | <b>TESTED BY</b><br>WB, JL                             |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
| <b>DATE</b> _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          | <b>CHECKED BY</b><br>ES                                |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | <b>SAMPLED BY</b><br>District                          |             |                      |          |            |             |                      |     |  |  |  |  |      |        |   |          |       |      |   |   |           |      |      |   |     |           |      |      |        |    |         |      |      |   |    |         |       |      |   |   |           |      |      |   |   |           |      |      |   |    |           |        |      |        |   |           |      |      |        |   |         |      |      |   |   |           |      |      |   |    |           |        |

Work Order No. 5193  
Reqn No. SAS EN GS 87-23

ARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LA. TORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA 30060-3112

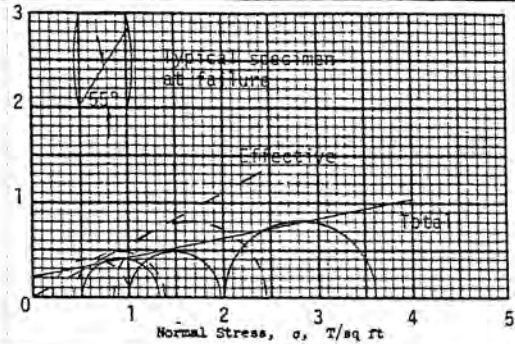


Shear Strength Parameters  
Total Effective  
 $\phi = 11.5 \text{ } 29.8$   
 $\tan \phi = 0.203 \text{ } 0.554$   
 $c = 0.21 \text{ } 0.0 \text{ T/sq ft}$

Method of saturation \_\_\_\_\_

Back Pressure \_\_\_\_\_

- ☐ Controlled stress  
☒ Controlled strain



| Test No.                                                   | 1               | 2       | 3       |   |
|------------------------------------------------------------|-----------------|---------|---------|---|
| Initial                                                    |                 |         |         |   |
| Water content                                              | $w_o$ 94.9 %    | 89.1 %  | 75.7 %  | % |
| Void ratio                                                 | $e_o$ 2.468     | 2.326   | 1.968   |   |
| Saturation                                                 | $s_o$ 100.0 %   | 99.6 %  | 100.0 % | % |
| Dry density, lb/cu ft                                      | $\gamma_d$ 46.8 | 48.8    | 54.7    |   |
| Before Shear                                               |                 |         |         |   |
| Water content                                              | $w_c$ 89.2 %    | 80.3 %  | 58.3 %  | % |
| Void ratio                                                 | $e_c$ 2.318     | 2.087   | 1.516   |   |
| Saturation                                                 | $s_c$ 100.0 %   | 100.0 % | 100.0 % | % |
| Final back pressure, T/sq ft                               | $u_o$ 5.00      | 5.00    | 5.00    |   |
| Final                                                      |                 |         |         |   |
| Water content                                              | $w_f$ 89.2 %    | 80.3 %  | 58.3 %  | % |
| Void ratio                                                 | $e_f$ 2.318     | 2.087   | 1.516   |   |
| Minor principal stress, T/sq ft                            | $\sigma_3$ 0.50 | 1.00    | 2.00    |   |
| Max deviator stress, T/sq ft $(\sigma_1 - \sigma_3)_{max}$ | 0.83            | 0.96    | 1.61    |   |
| Time to failure, min                                       | $t_f$ 45        | 35      | 35      |   |
| Rate of strain, percent/min                                | 0.10            | 0.11    | 0.11    |   |
| Strain @ $(\sigma_1 - \sigma_3)_{max}$                     | 4.4             | 3.7     | 3.7     |   |
| Ult deviator stress, T/sq ft $(\sigma_1 - \sigma_3)_{ult}$ | 0.55            | 0.66    | 1.18    |   |
| Initial diameter, in.                                      | $D_o$ 1.38      | 1.38    | 1.38    |   |
| Initial height, in.                                        | $H_o$ 3.08      | 3.08    | 3.08    |   |

|                |                                                                                                      |                  |             |
|----------------|------------------------------------------------------------------------------------------------------|------------------|-------------|
| Type of test   | R                                                                                                    | Type of specimen | Undisturbed |
| Classification | Dark gray clayey inorganic silt, high LL (MH), with some sand and a trace of organic matter and mica |                  |             |
| LL             | 95                                                                                                   | PL               | 45          |
|                |                                                                                                      | PI               | 50          |
|                |                                                                                                      |                  | --          |
|                |                                                                                                      |                  | $G_s$ 2.60  |

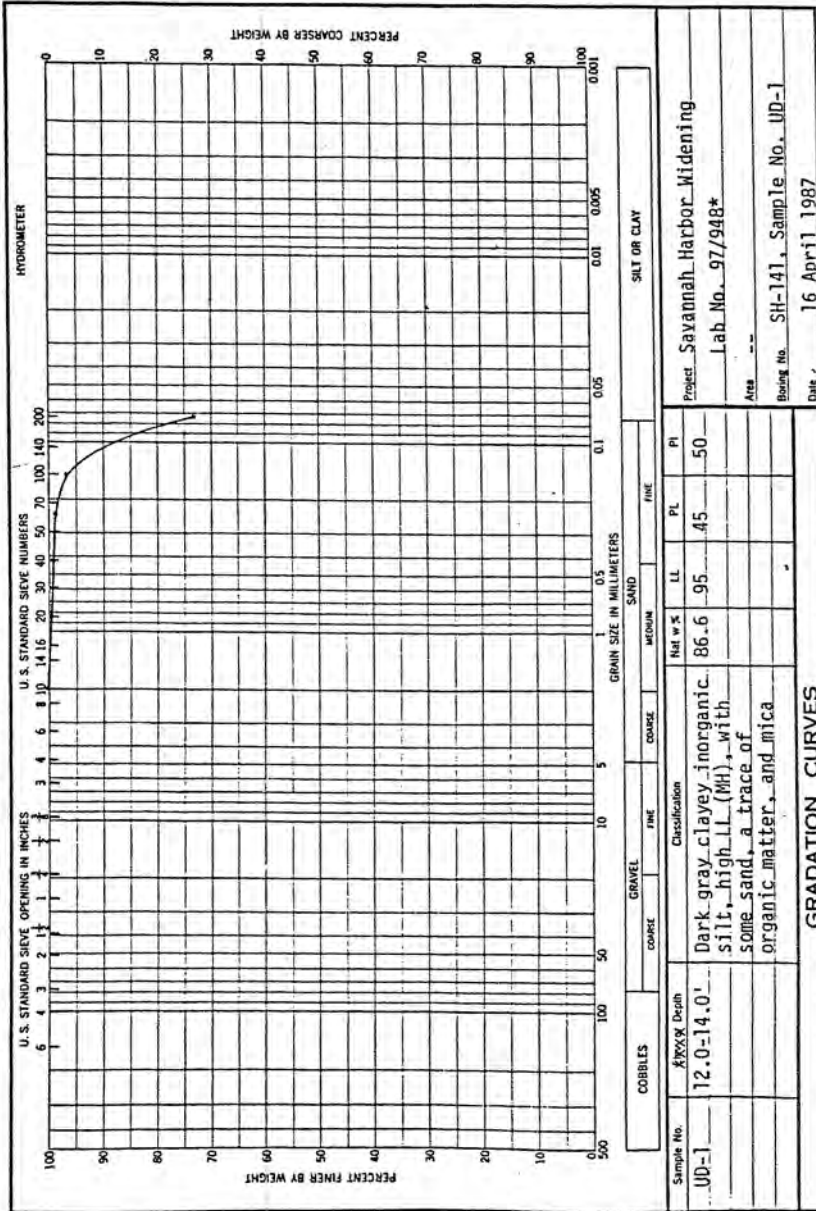
Remarks See gradation curve on ENG Form 2087.

|            |                          |
|------------|--------------------------|
| Project    | Savannah Harbor Widening |
| Lab No.    | 97/948                   |
| Area       | --                       |
| Boring No. | SH-141                   |
| Sample No. | UD-1                     |
| Depth      | 12.0-14.0'               |
| Date       | 16 April 1987            |

TRIAXIAL COMPRESSION TEST REPORT

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA 30060-3112

Work Order No. 5193  
Reqn No. SAS EN GS 87-23



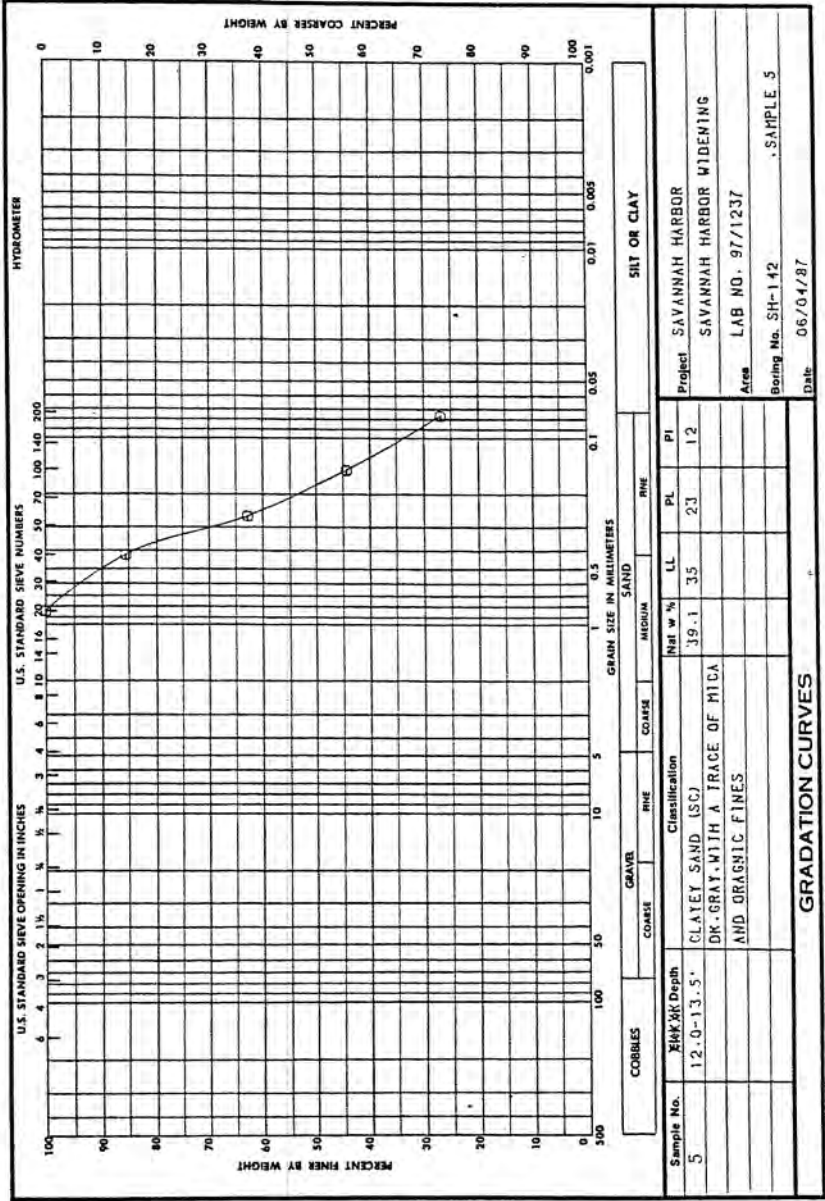
ENG FORM 1 MAY 65 2087

\*R Triaxial Test

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

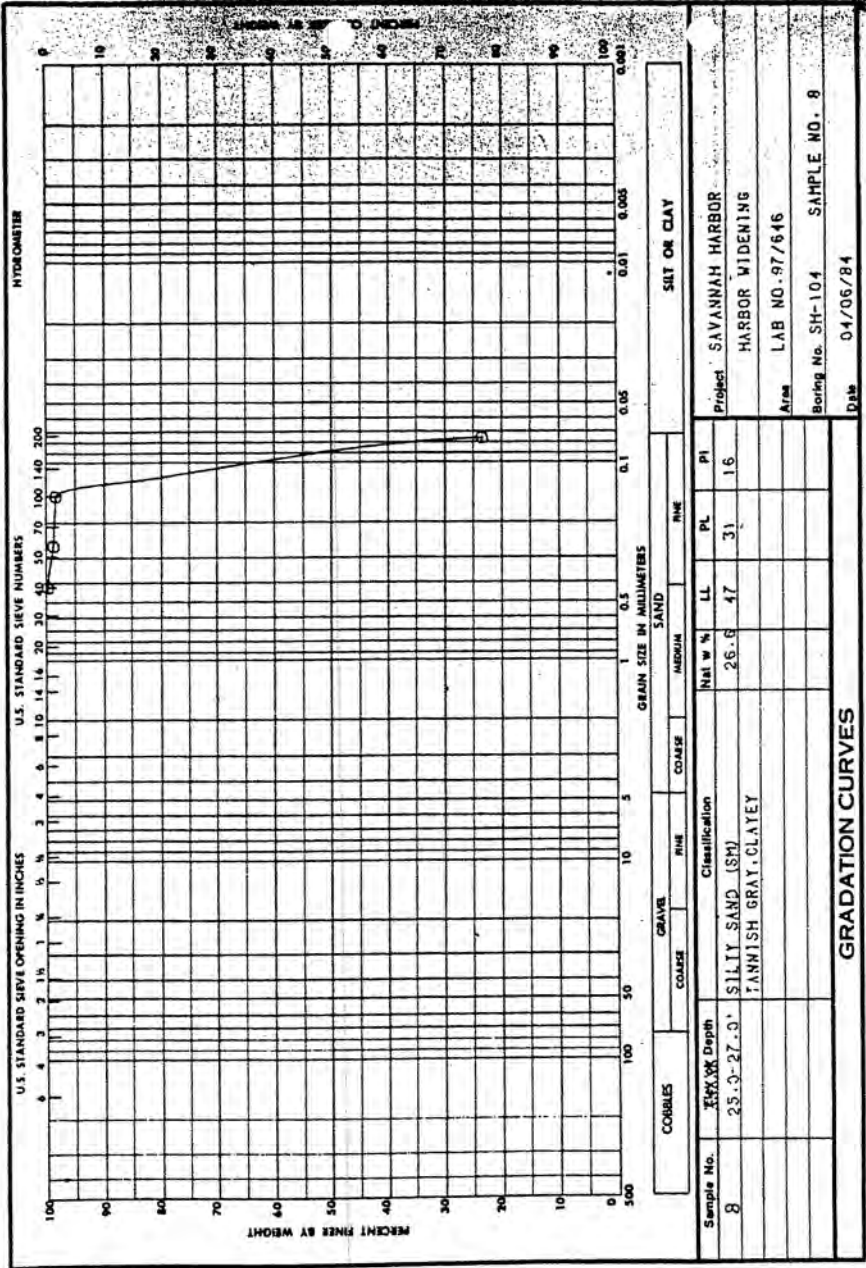
Req. No. SAS-EN-6S-87-23



ENG FORM 2087  
1 MAY 63



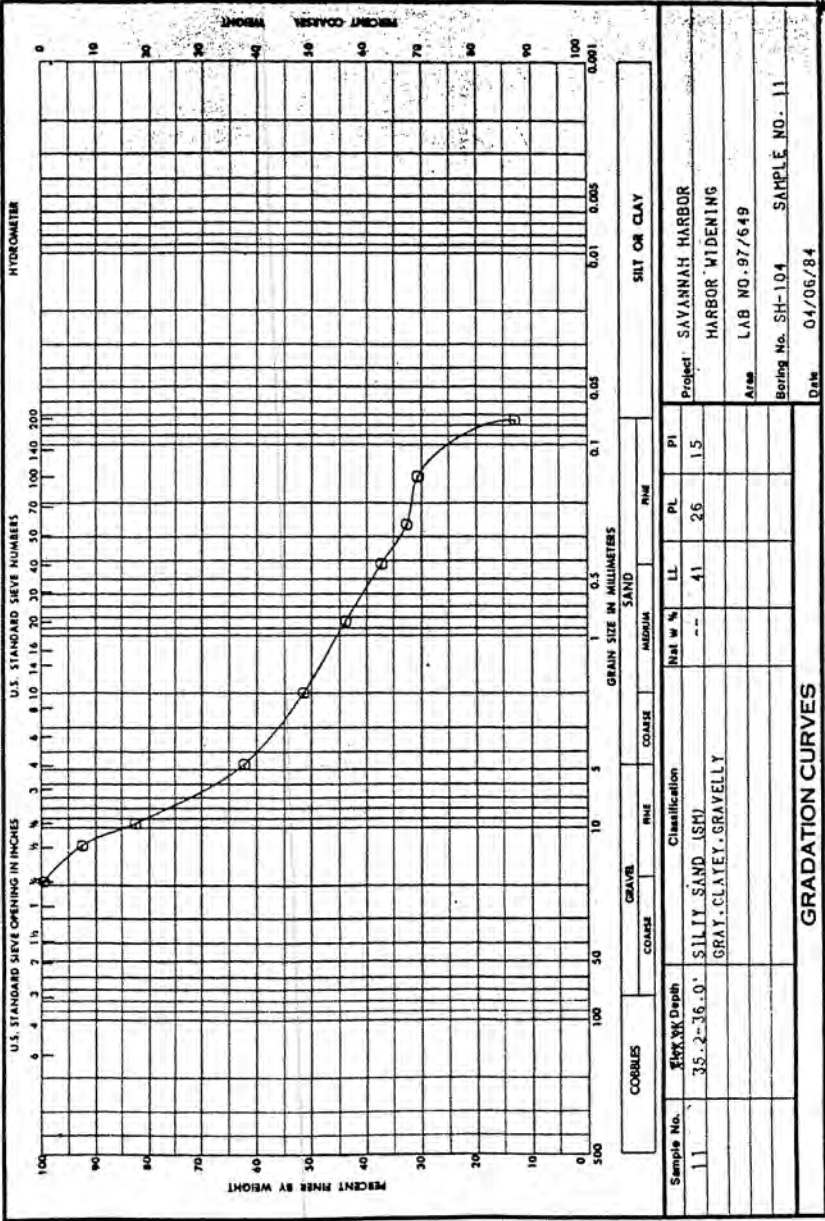






CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

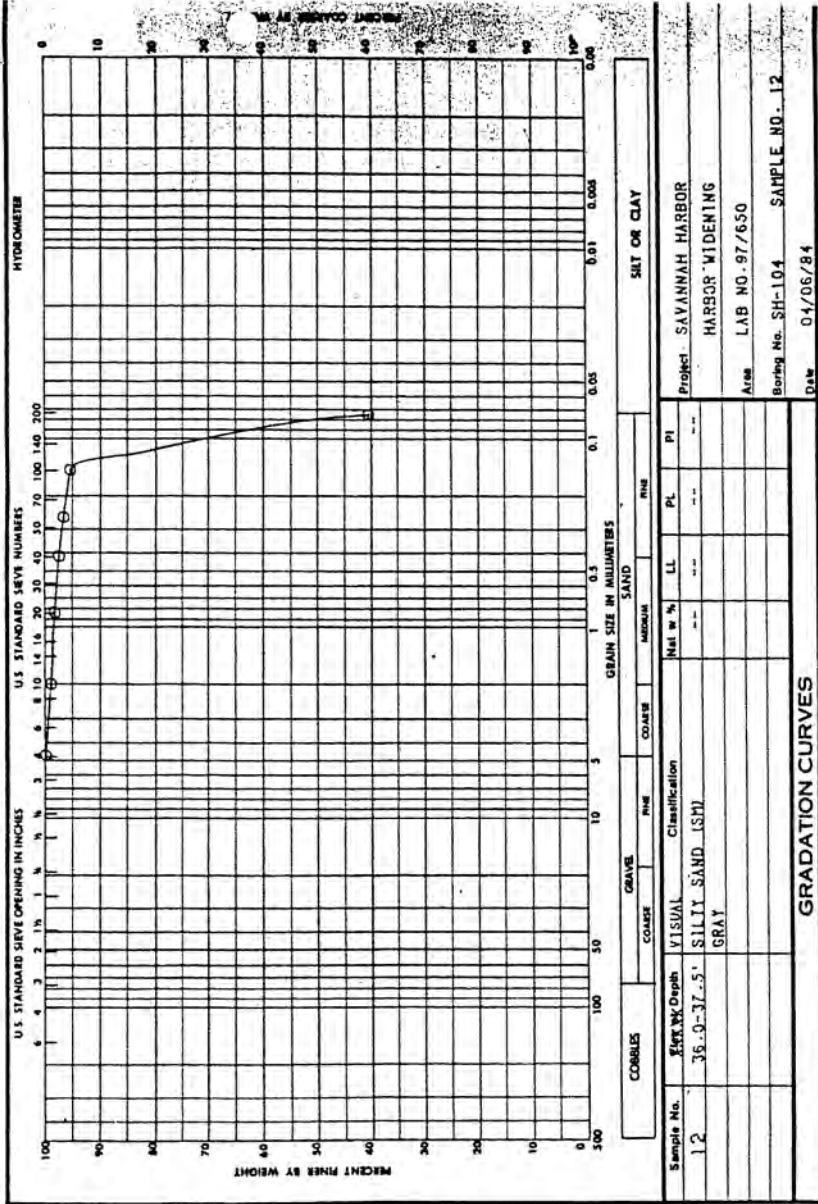
Req. No. EN-GS-84-03



ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

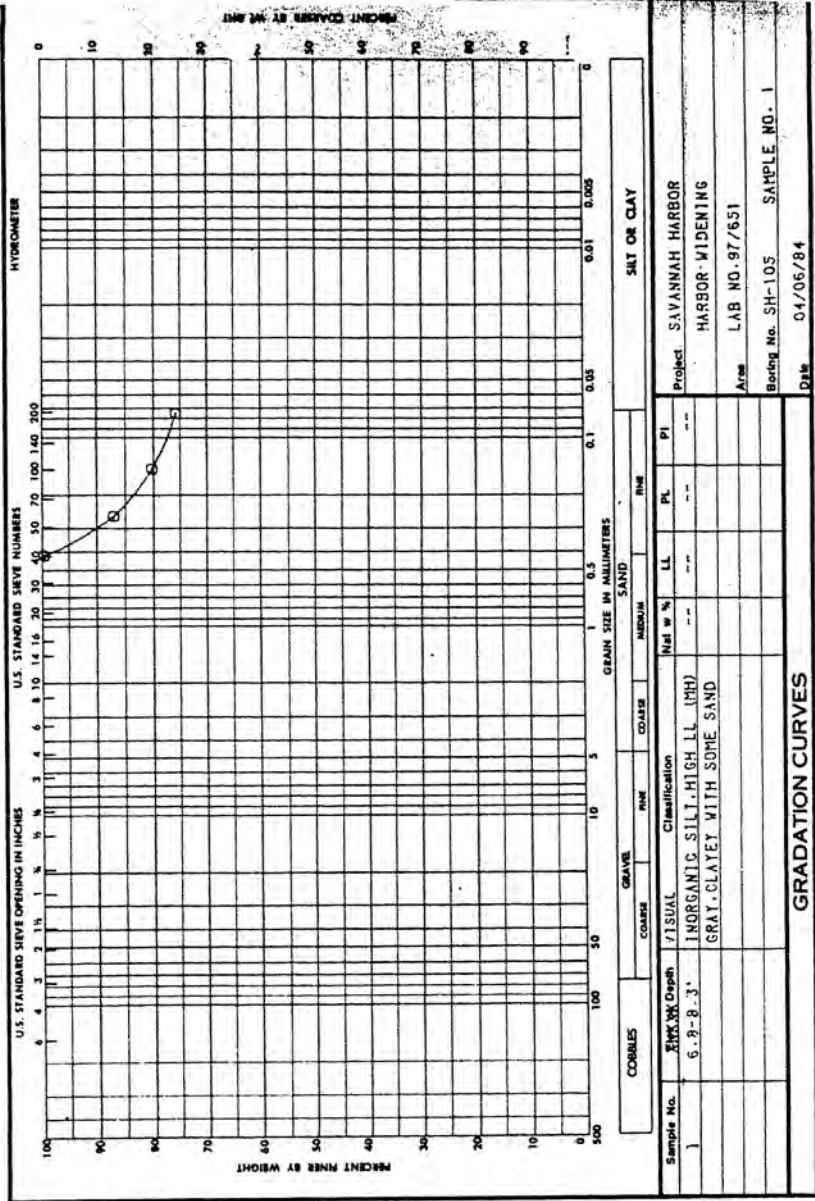
W.O. No. 3778  
Req. No. EN-GS-84-03



GRADATION CURVES

ENG FORM 2087  
1 MAY 65

Req. No. EN-GS-84-03

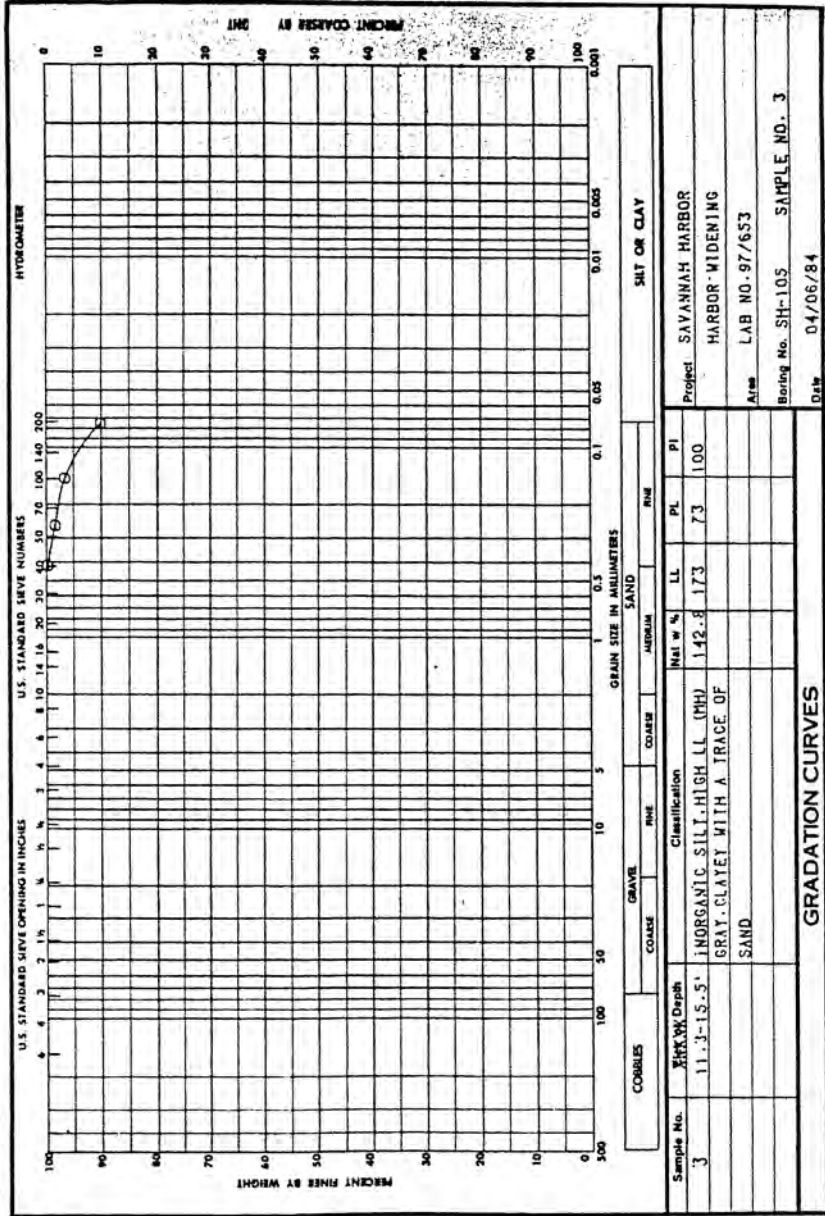


**ENG** FORM **2087**  
1 MAY 63

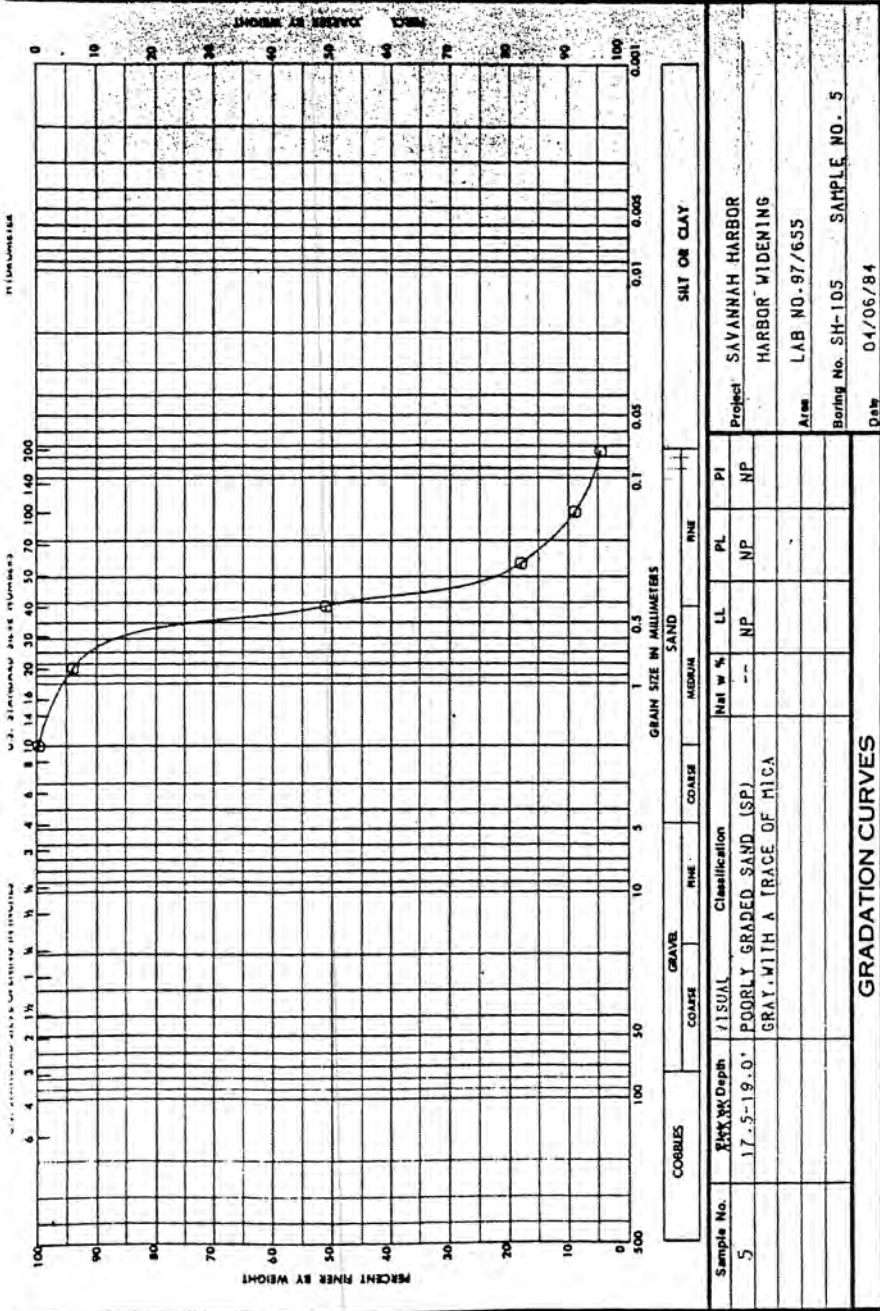
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

FD-302 (Rev. 3-7-59)

Req. No. EN-CS-84-03



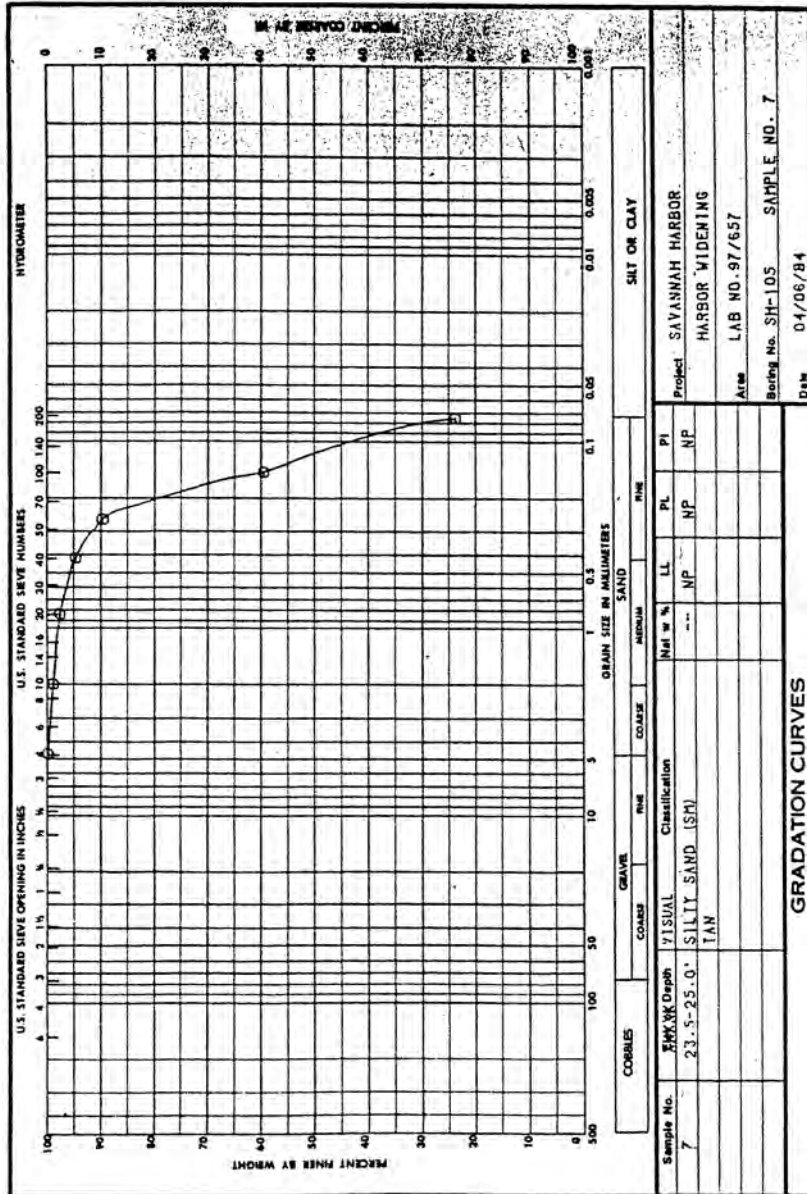
ENG FORM 2087  
1 MAY 83



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 3778

Req. No. EN-GS-84-03



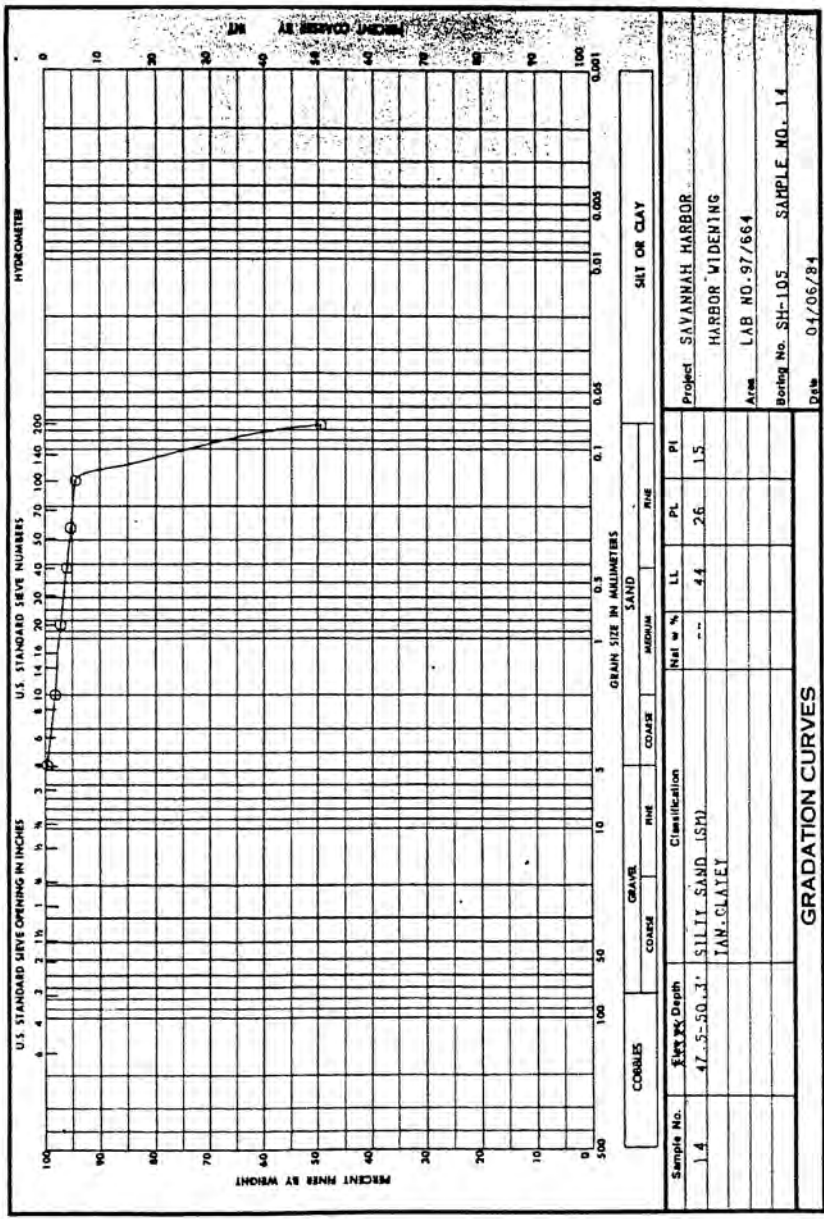
ENG FORM 2087  
1 MAY 63





W.O. No. 3778  
Req. No. EN-65-84-03

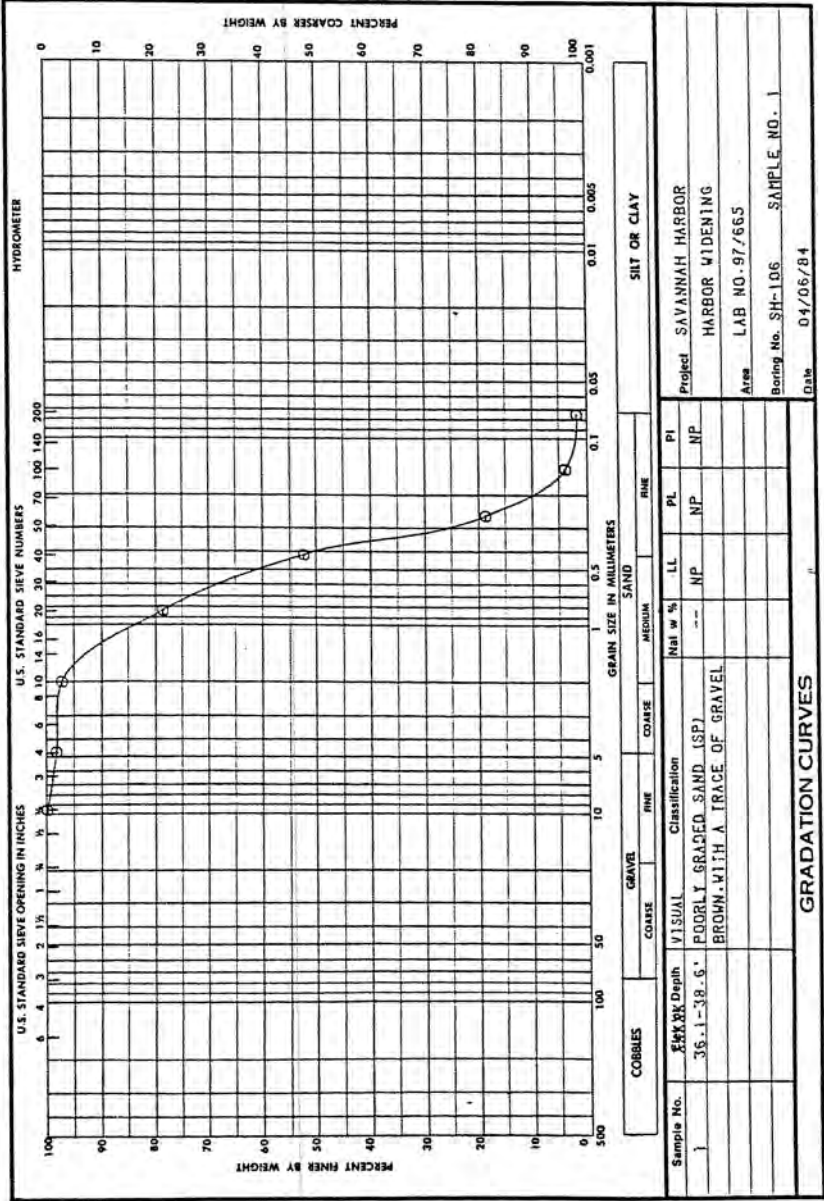
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





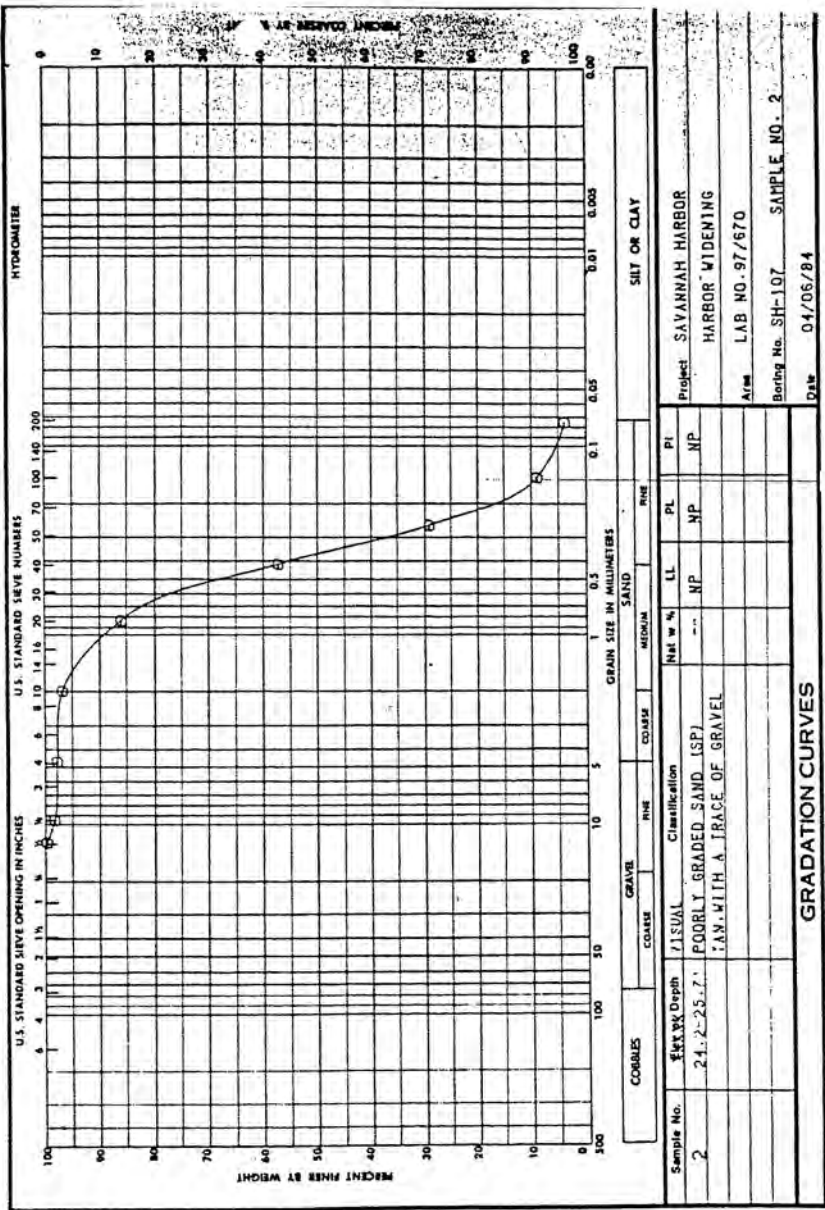
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Req. No. EN-GS-84-03

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



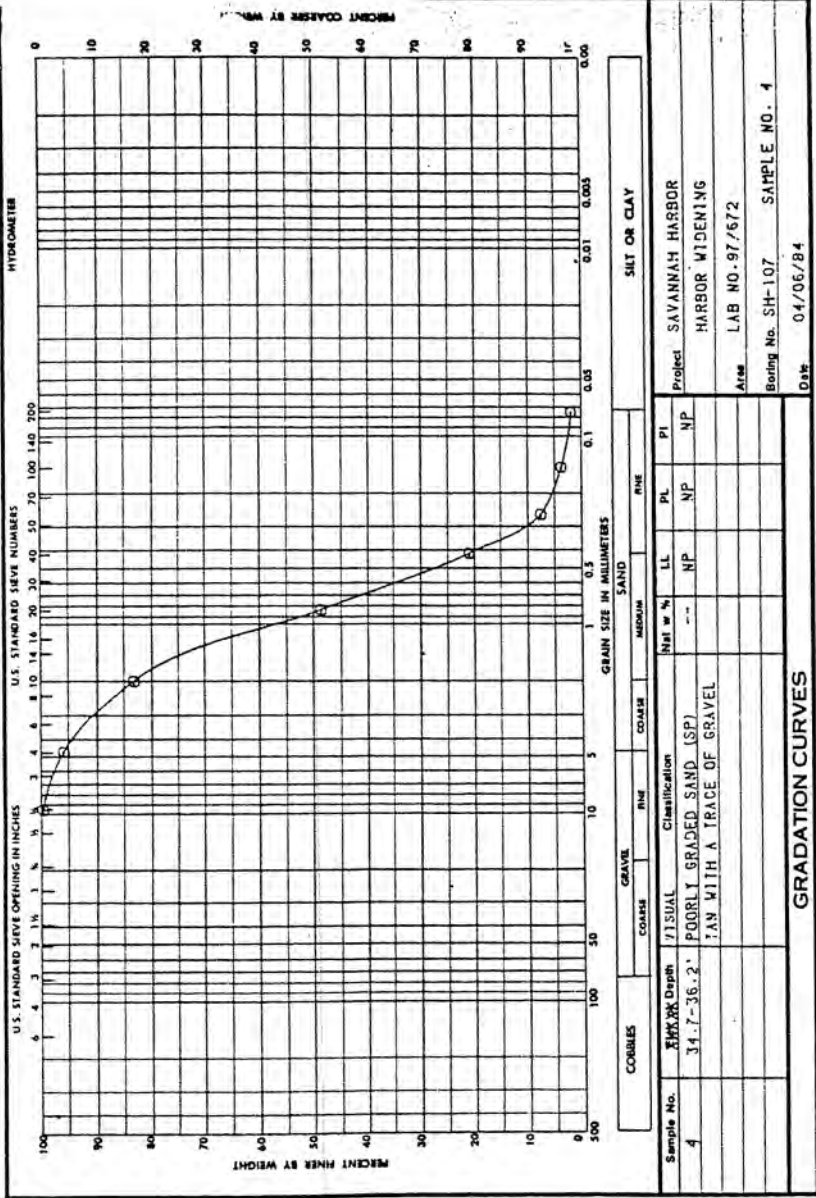
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Req. No. EN-6S-84-03

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



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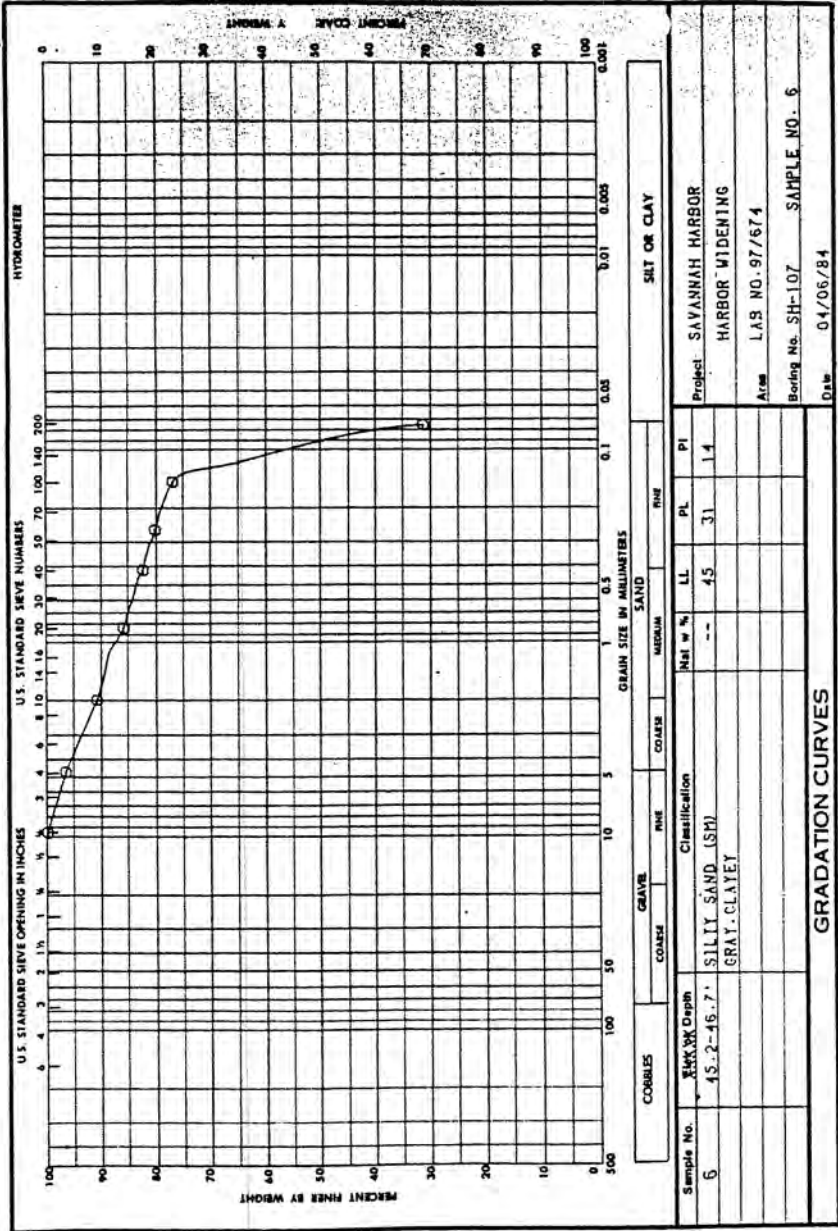
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Req. No. EN-GS-84-03



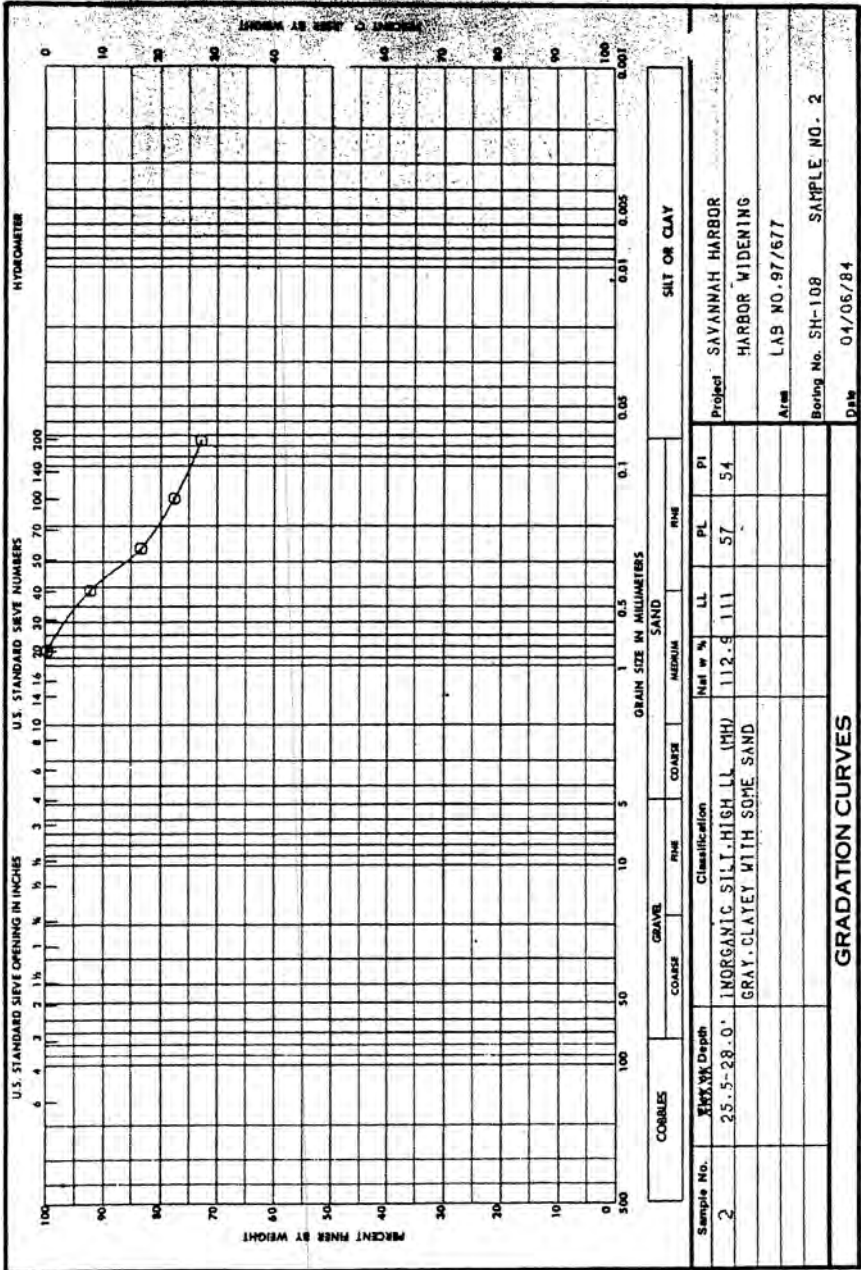
FORM 1 MAY 63  
ENG 2087

Req. No. EN-GS-84-03

CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

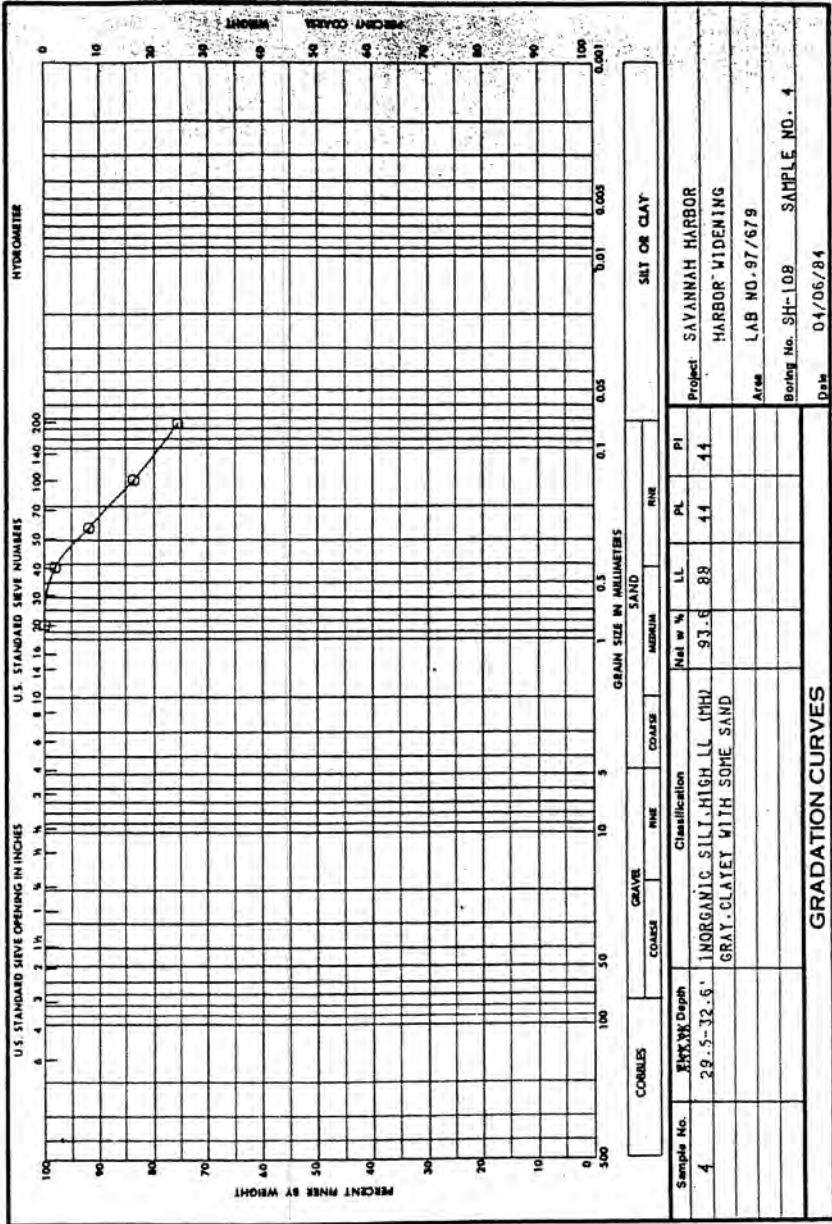


ENG 2087



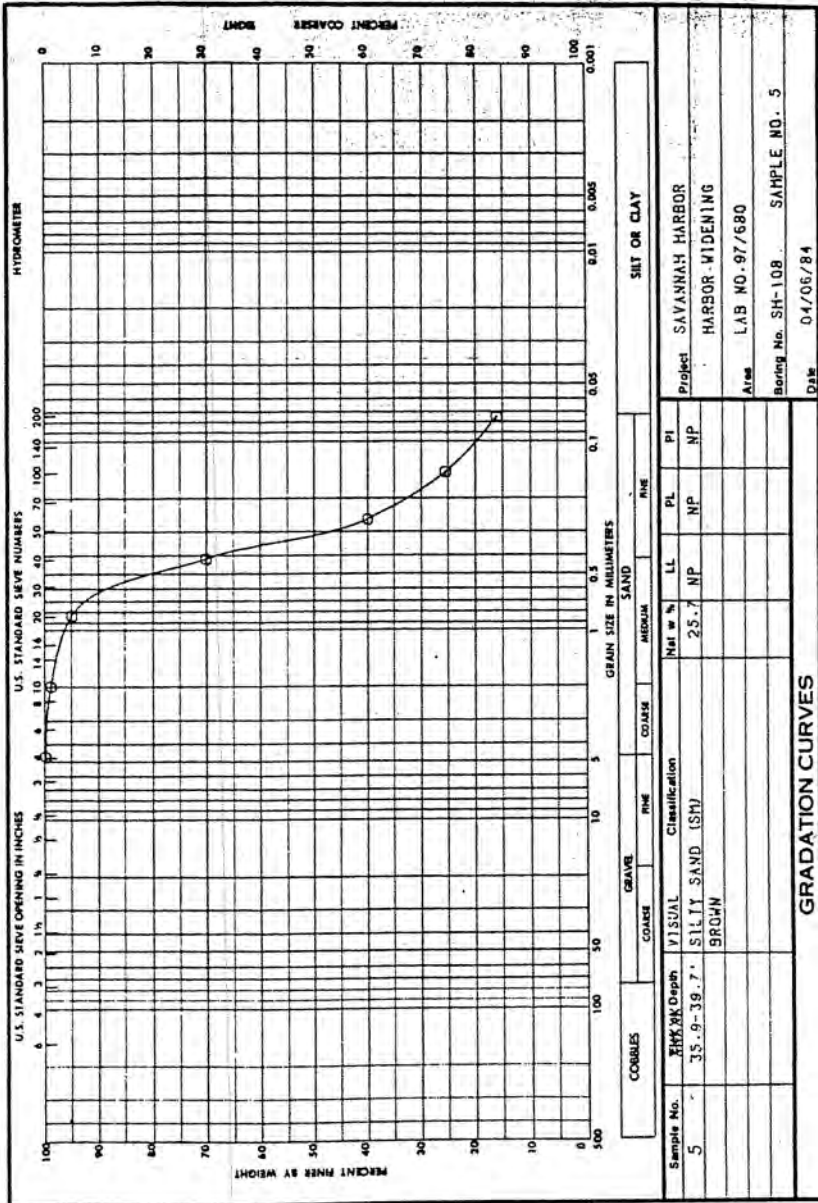
Req No. EN-68-84-03

CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

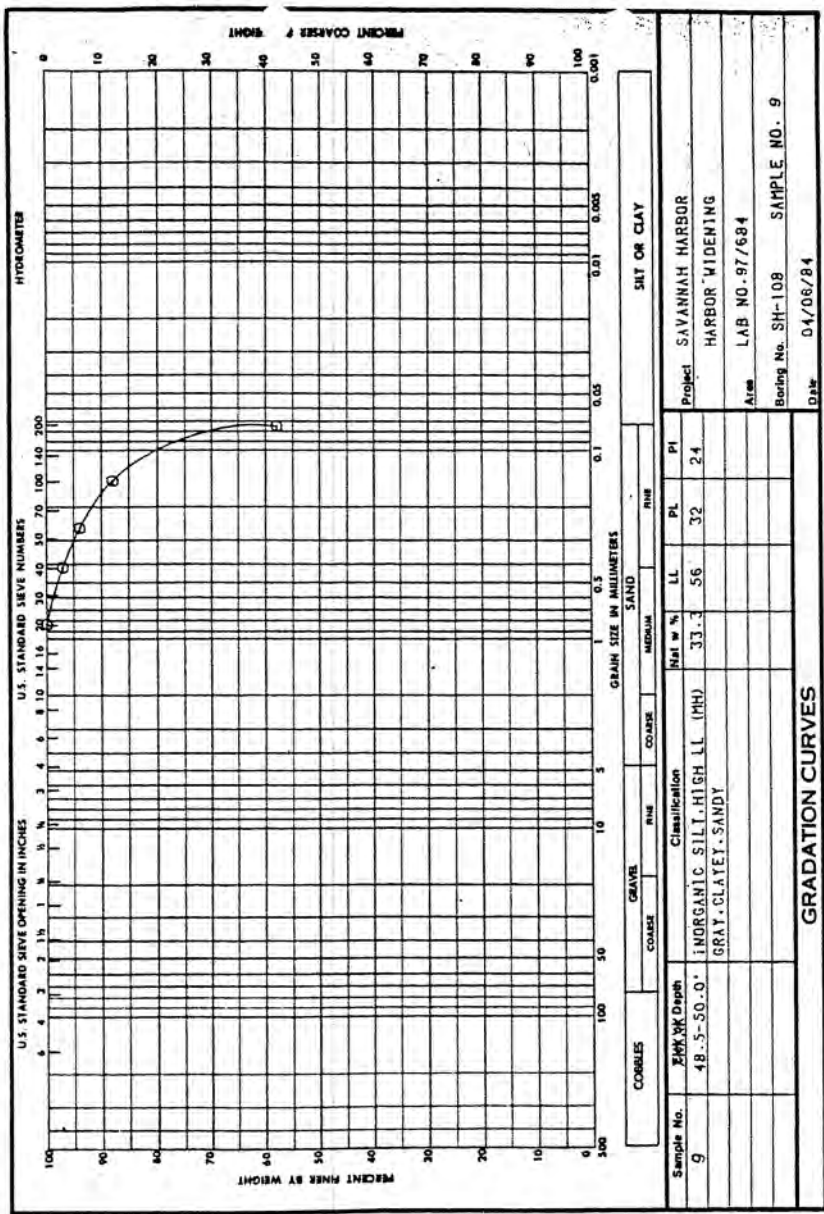
W.O. No. 3778  
Req. No. EN-GS-84-03





W.O. No. 3778  
Req. No. EN-65-184-03

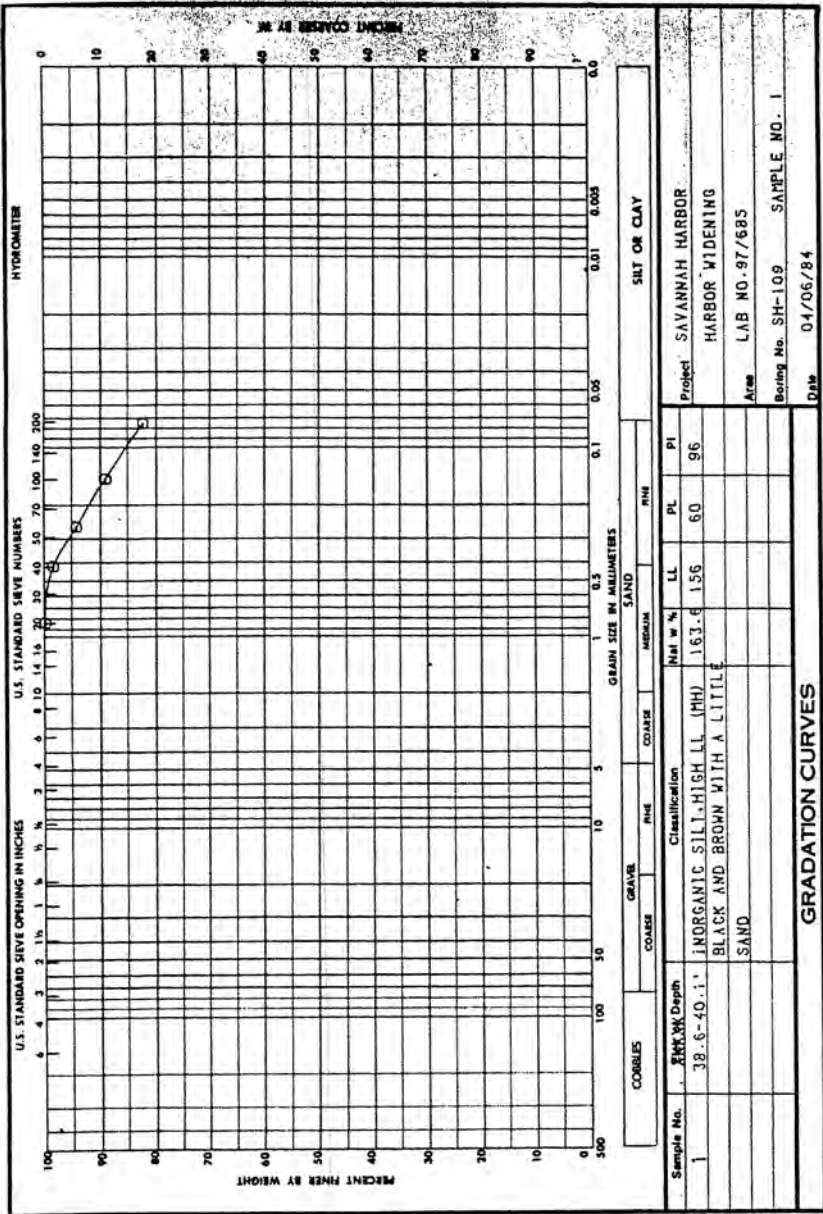
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





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 Req. No. EN-65-84-03

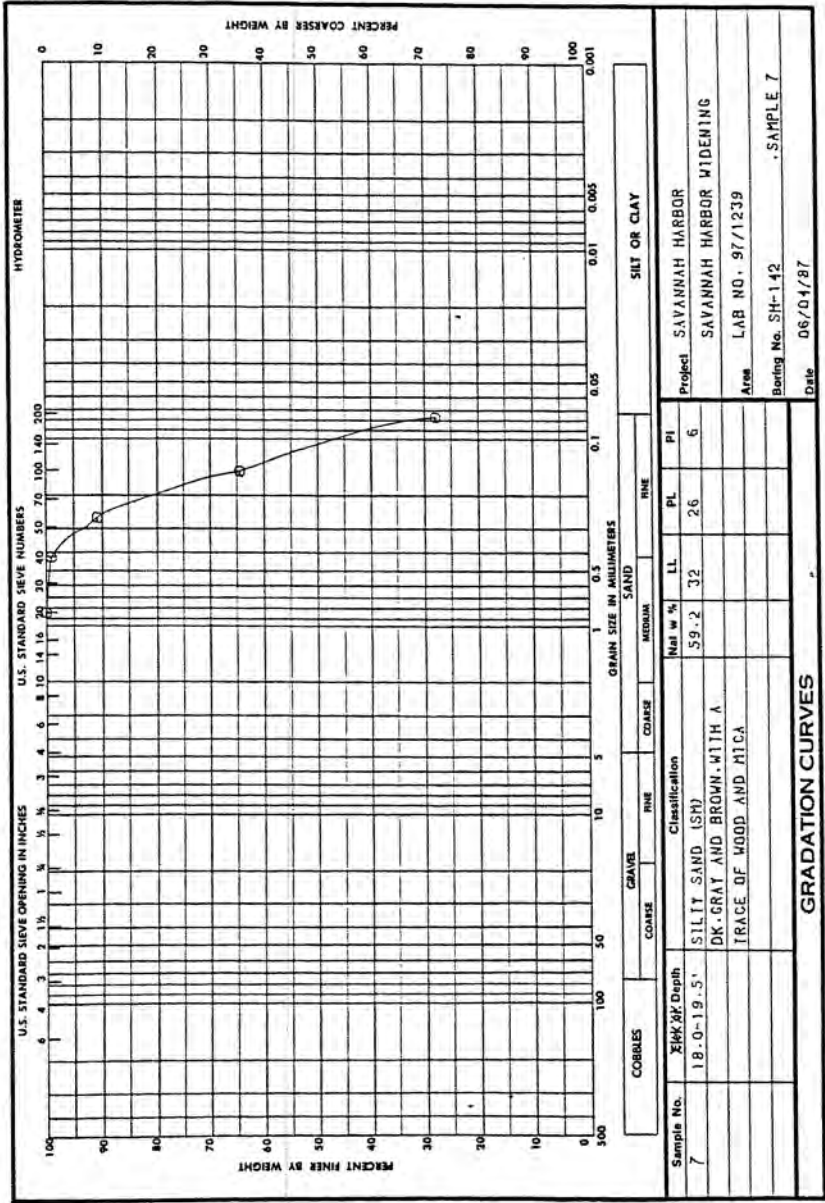
PARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIE, GA. 30060



FORM 1 MAY 65  
 ENG 2087

W.O. No. 5193  
Req. No. SAS-EN-6S-87-23

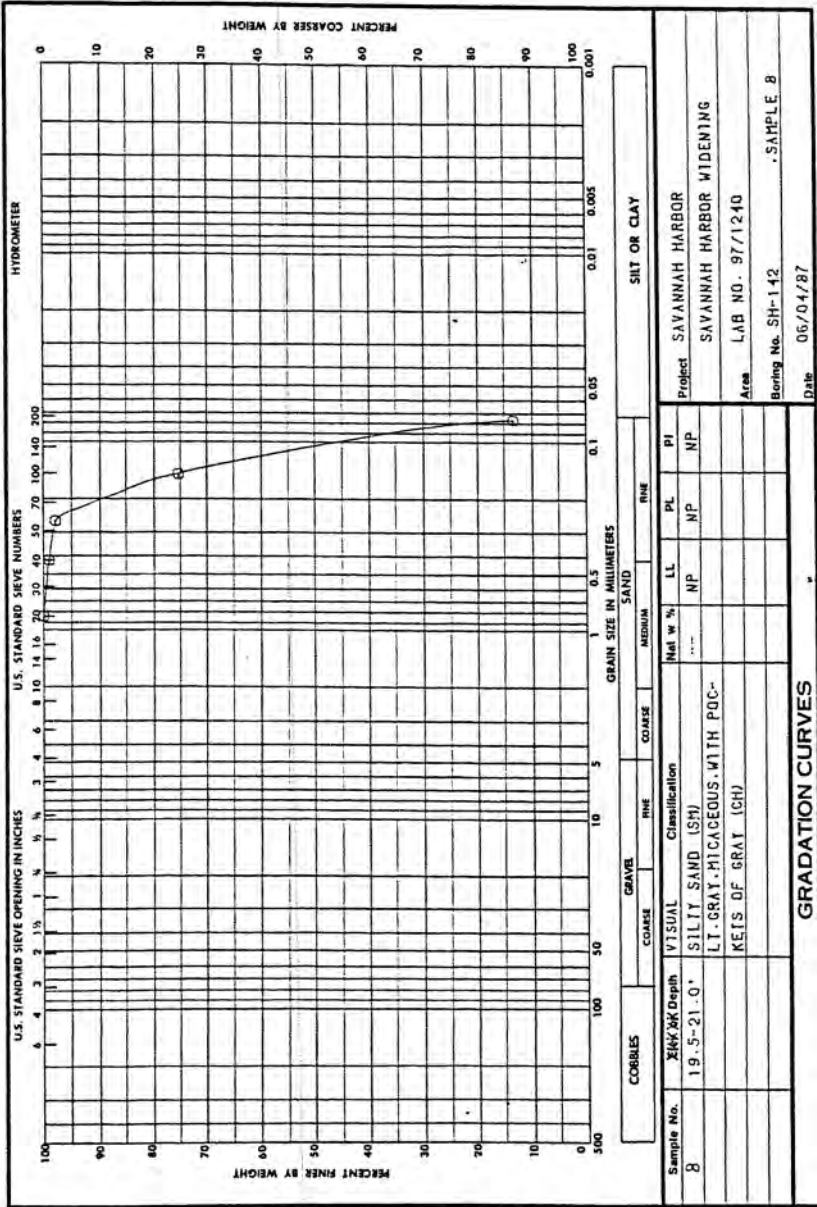
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

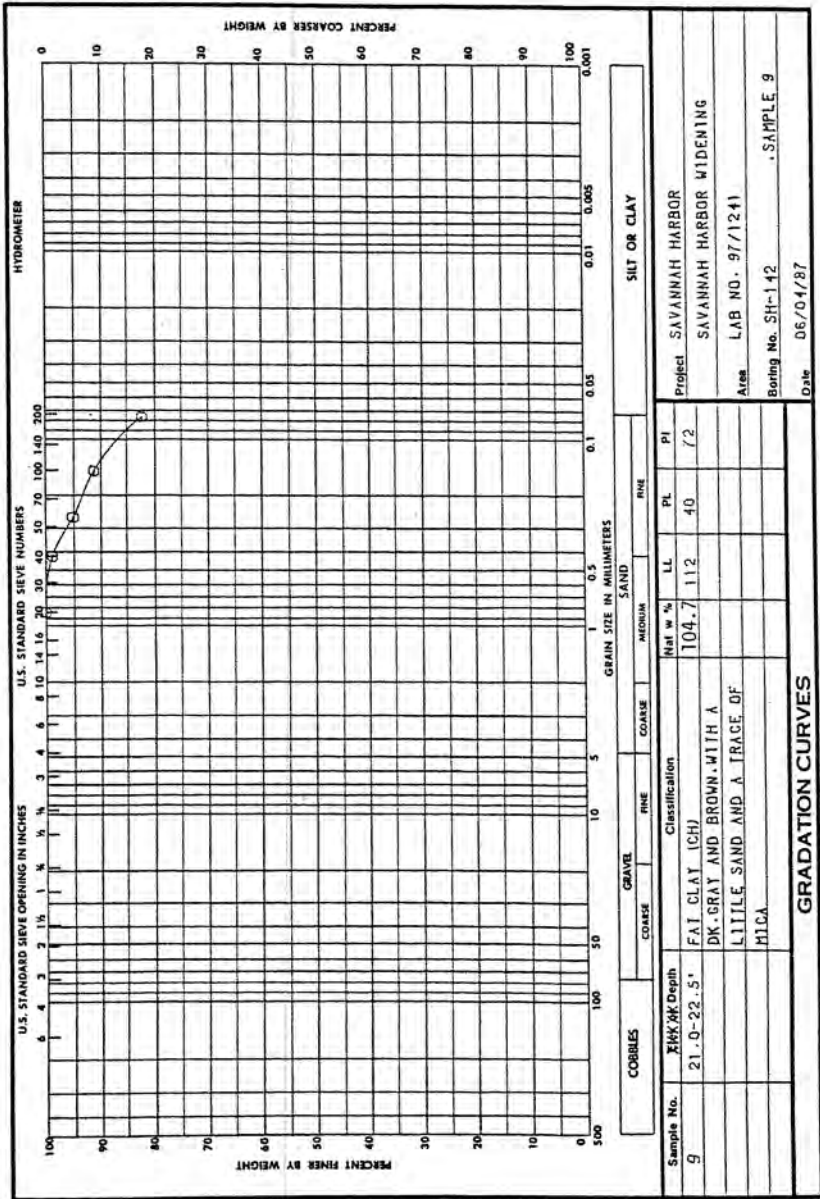
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Req. No. SAS-EN-GS-87-23



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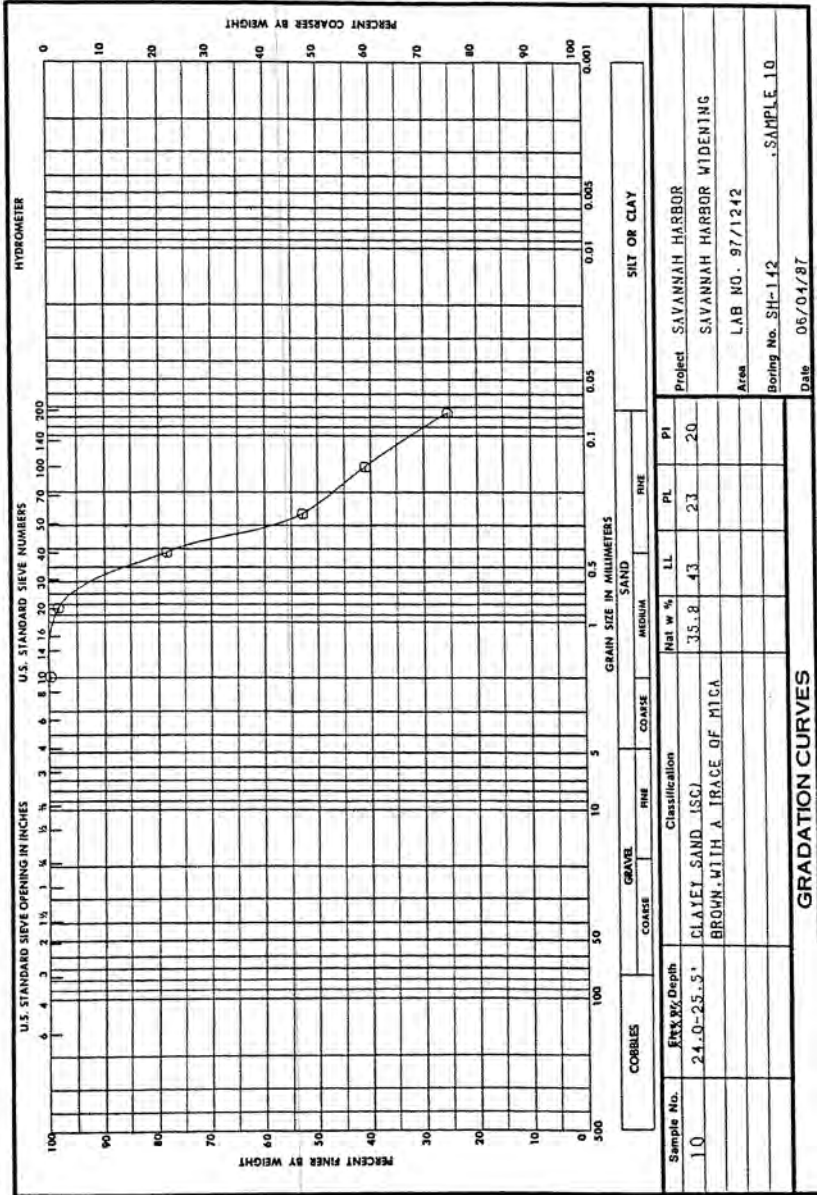
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

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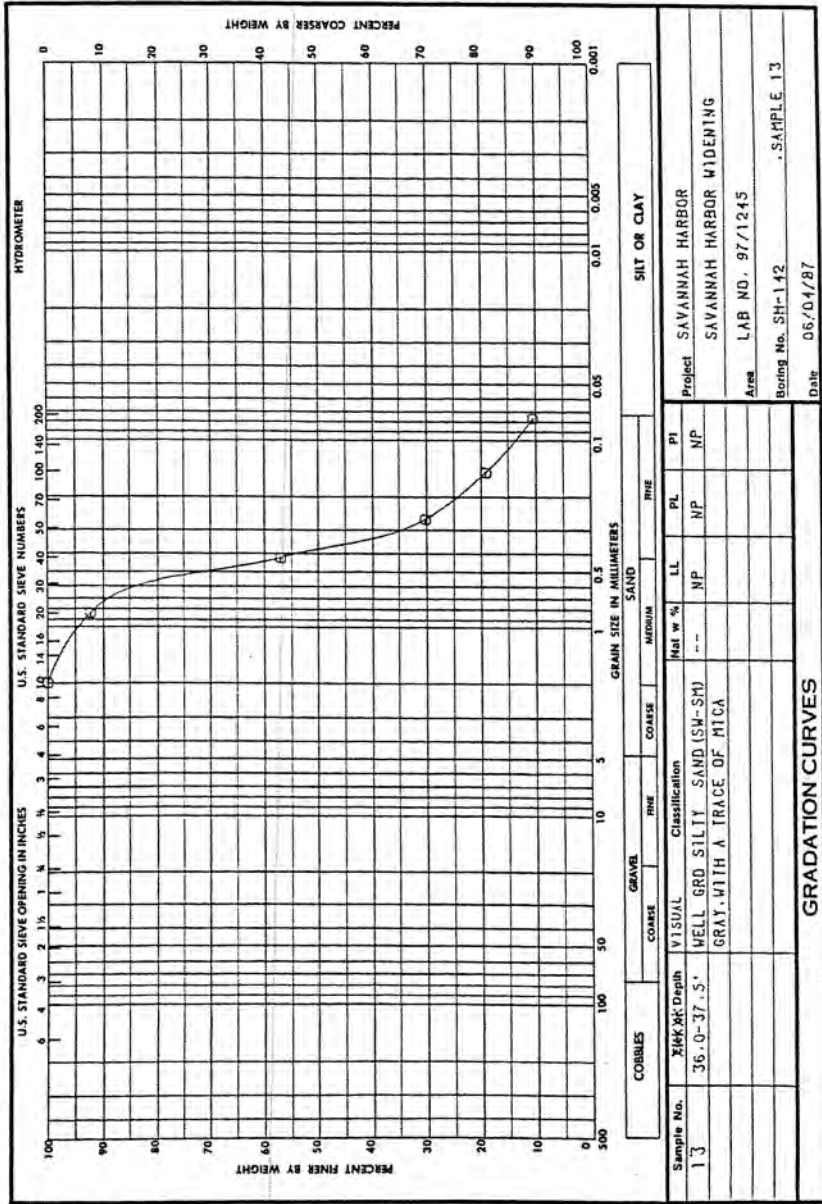


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

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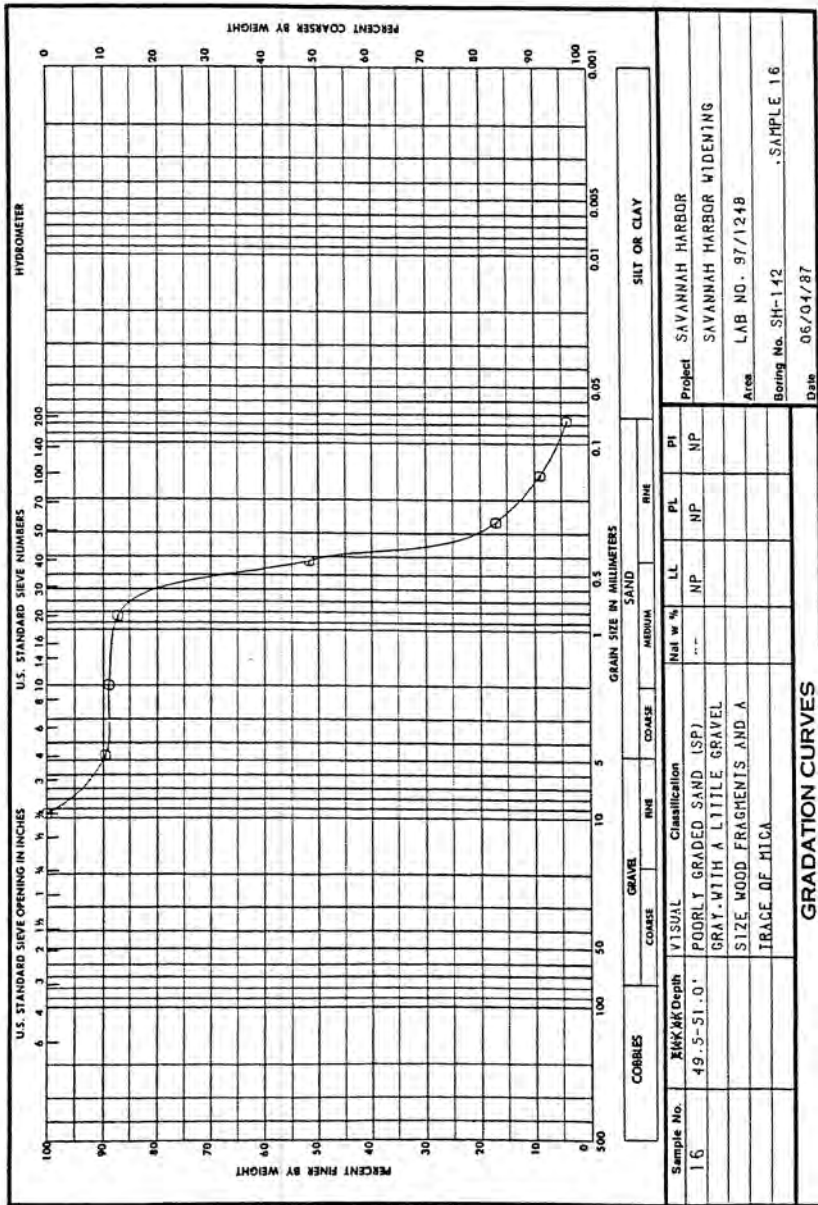


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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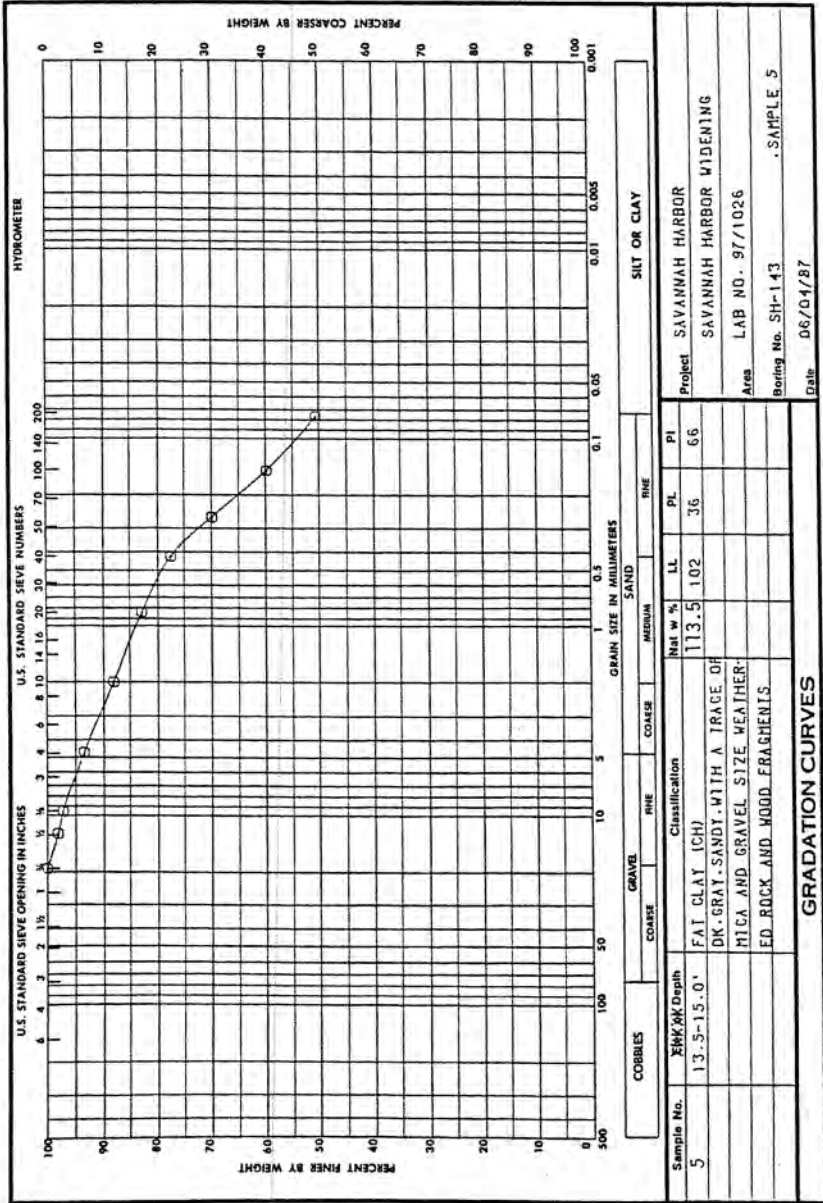
ENG FORM 2087  
1 MAY 65



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-6S-87-23

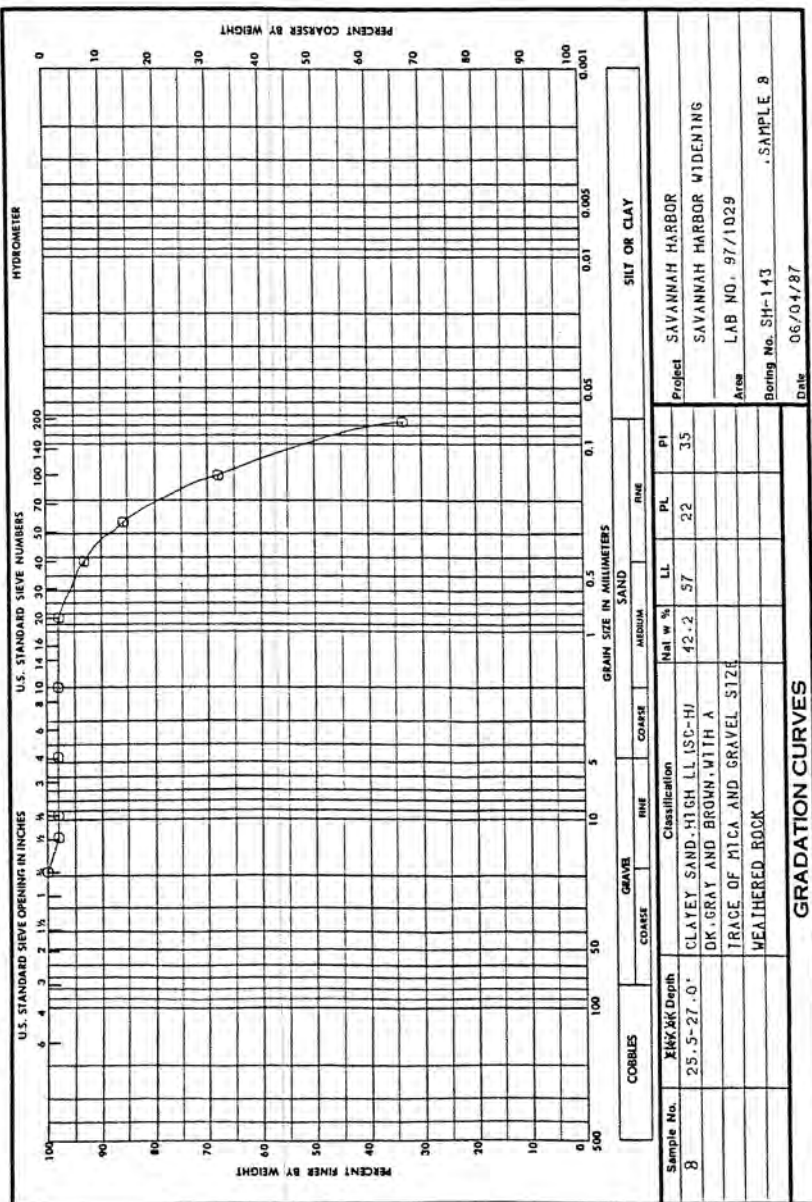


ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193  
Req. No. SAS-EN-6S-87-23

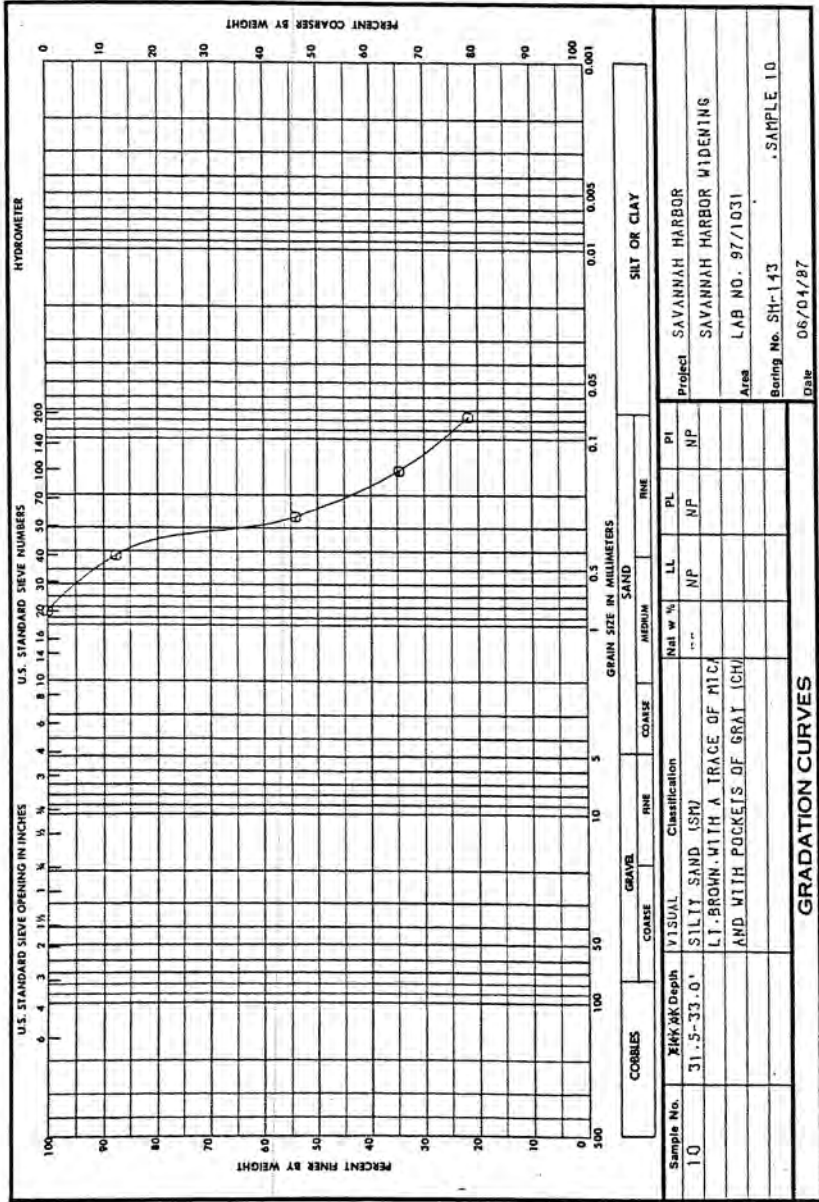


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

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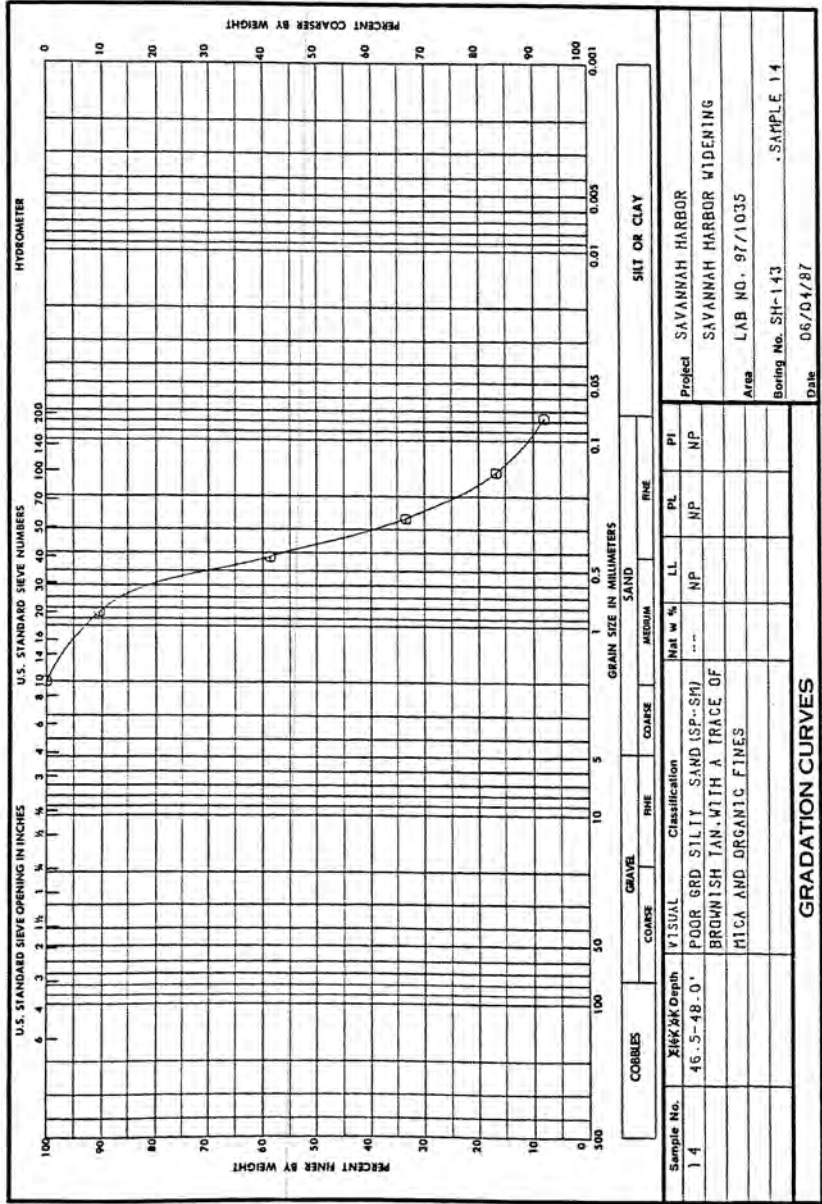
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

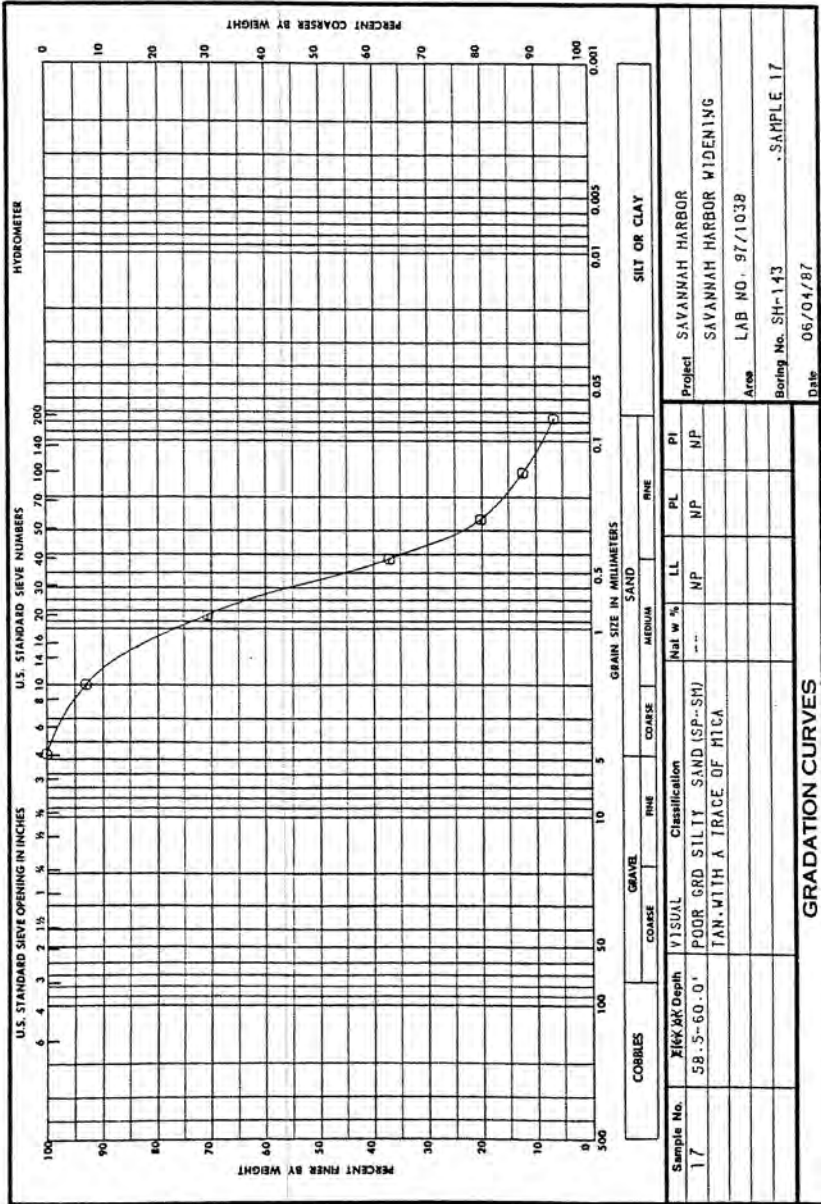
Req. No. SAS-EN-6S-87-23



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Req. No. SAS-EN-6S-87-23

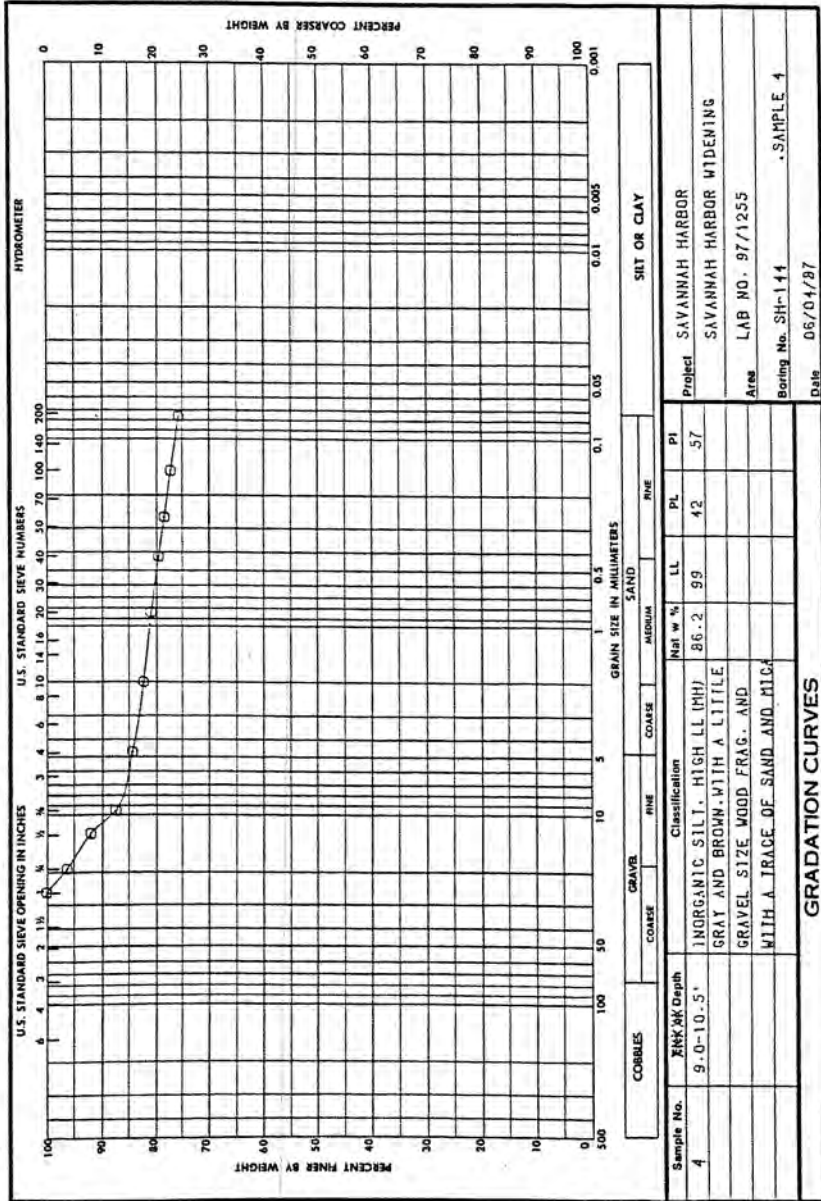


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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W.O. No. 5193

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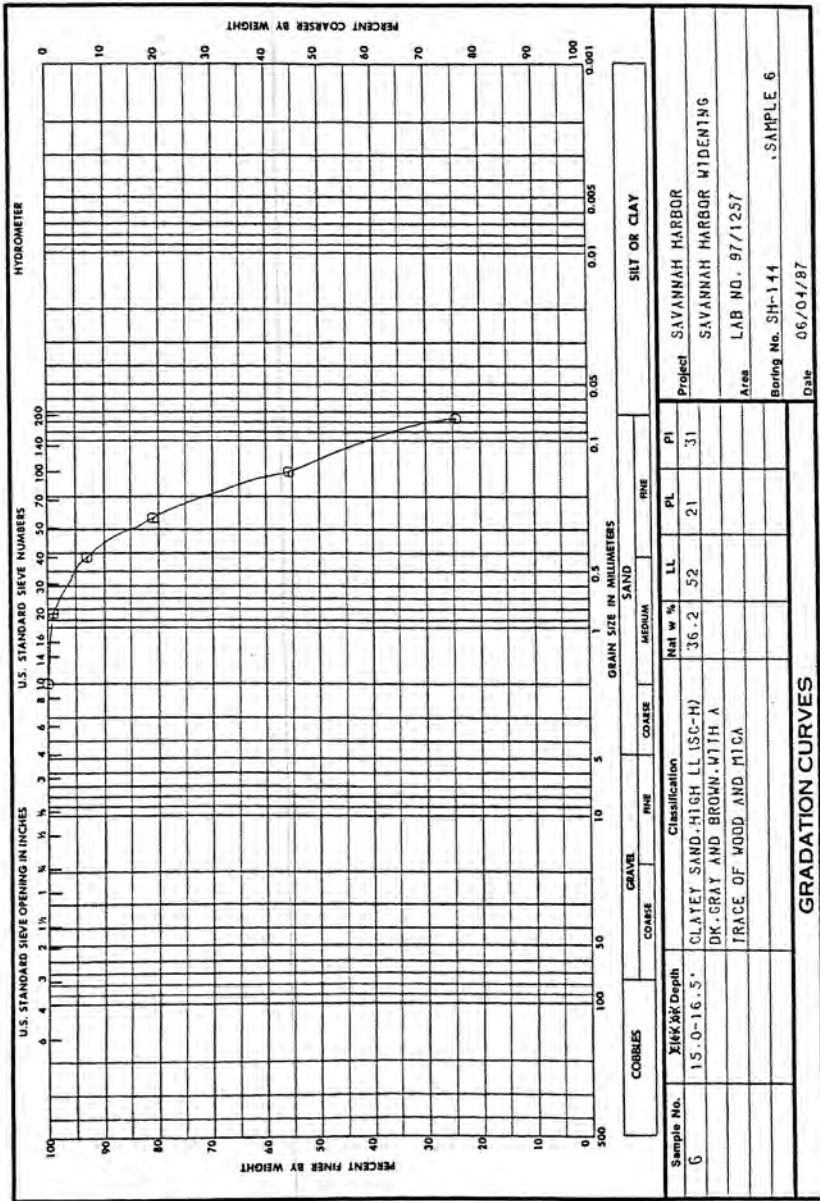


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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W.O. No. 5193

Req. No. SAS-EN-GS-87-23



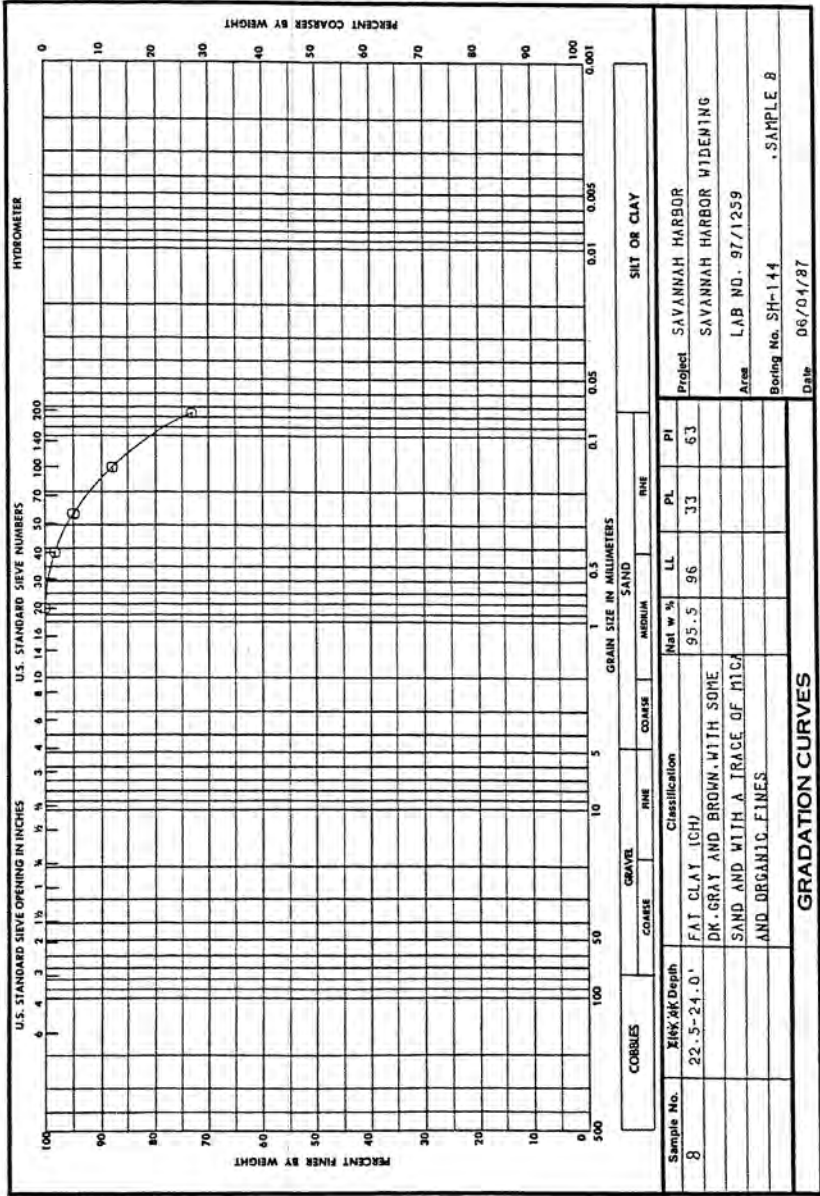
ENG FORM 2087  
1 MAY 63



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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W.O. No. 5193

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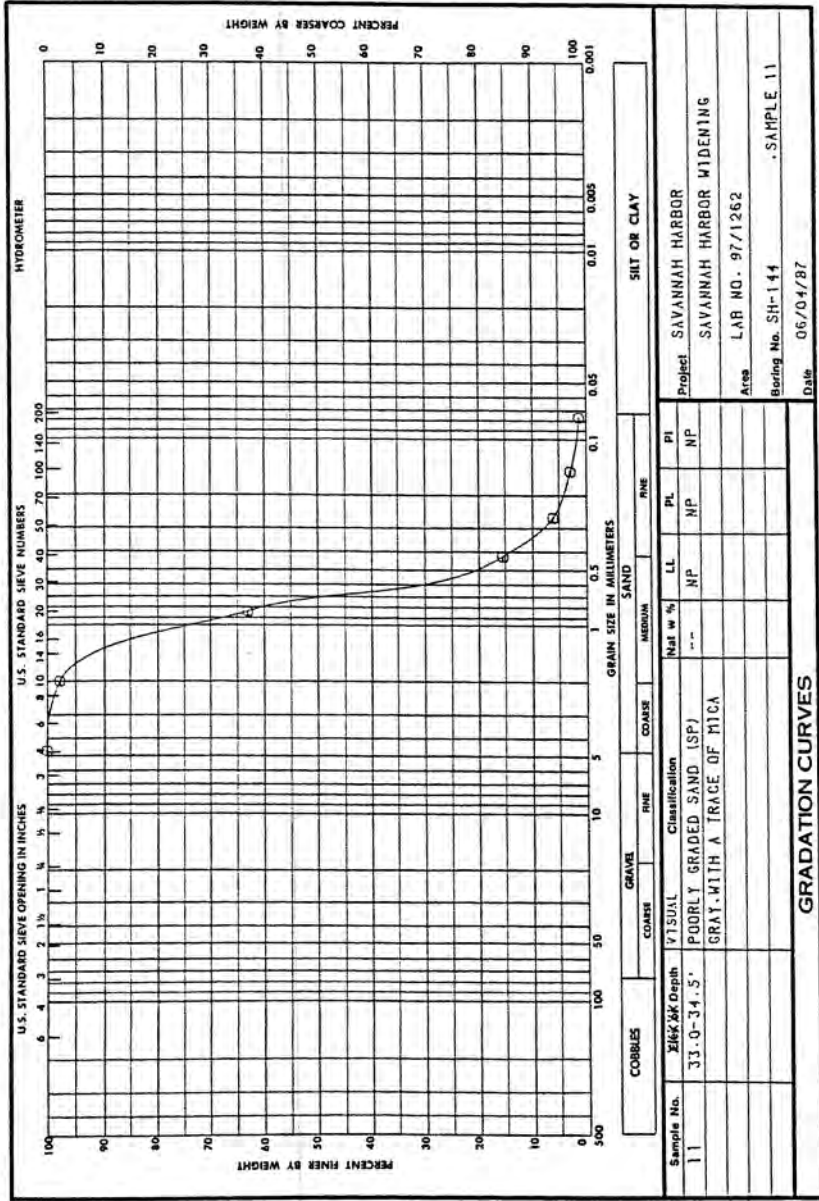




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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-65-87-23

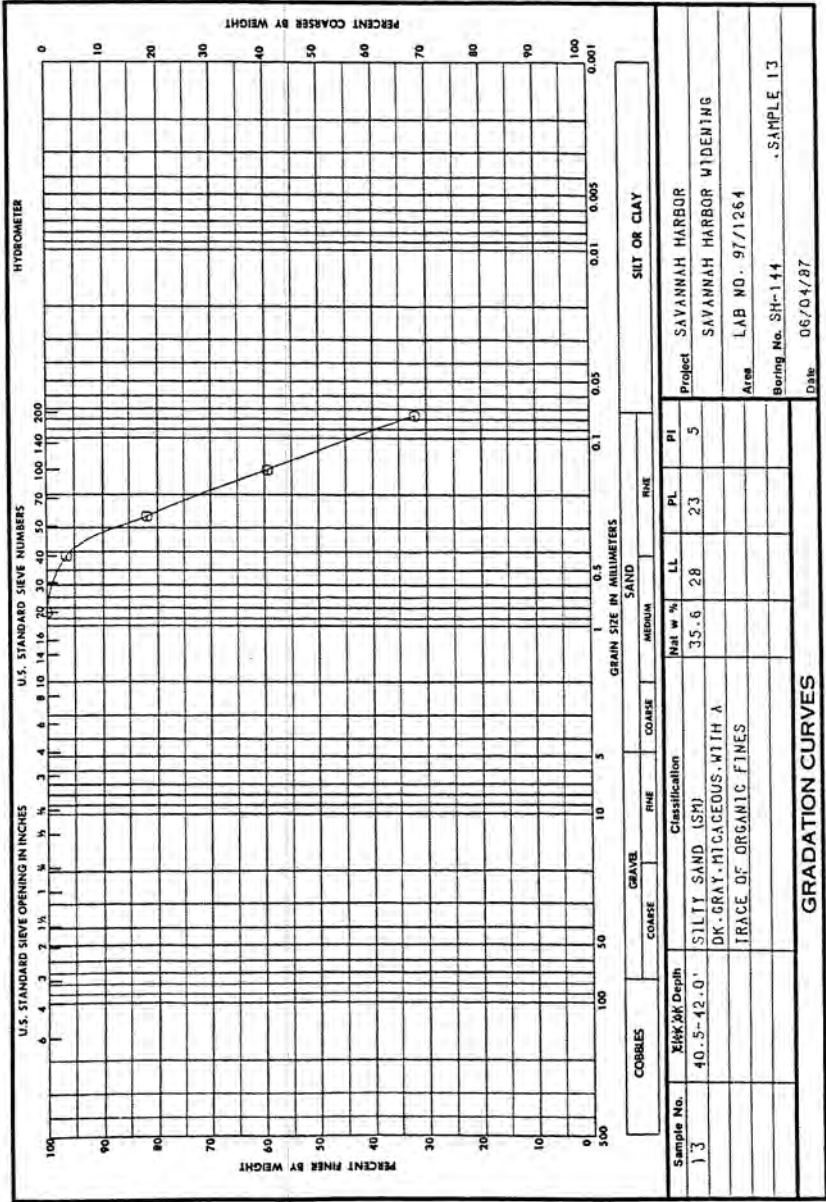


ENG FORM 1 MAY 63 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

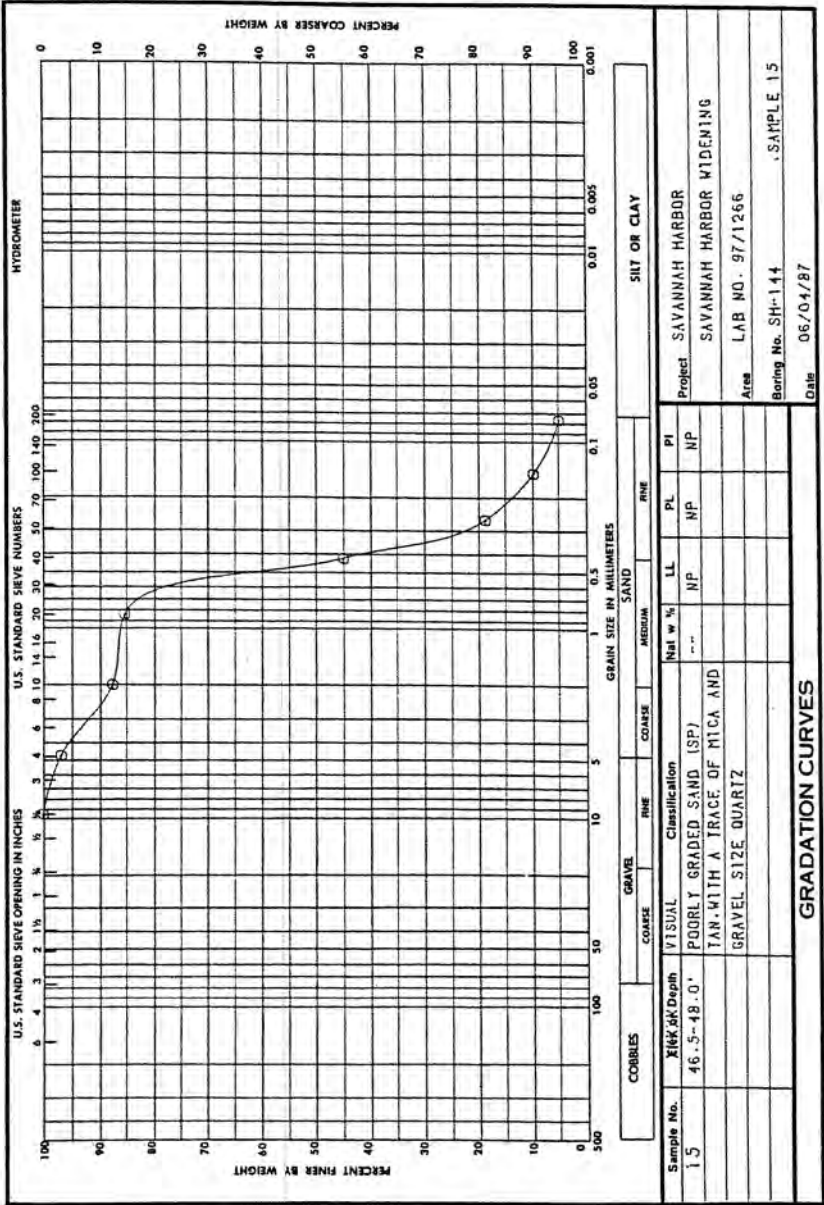


ENG FORM 2087  
1 MAY 63

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

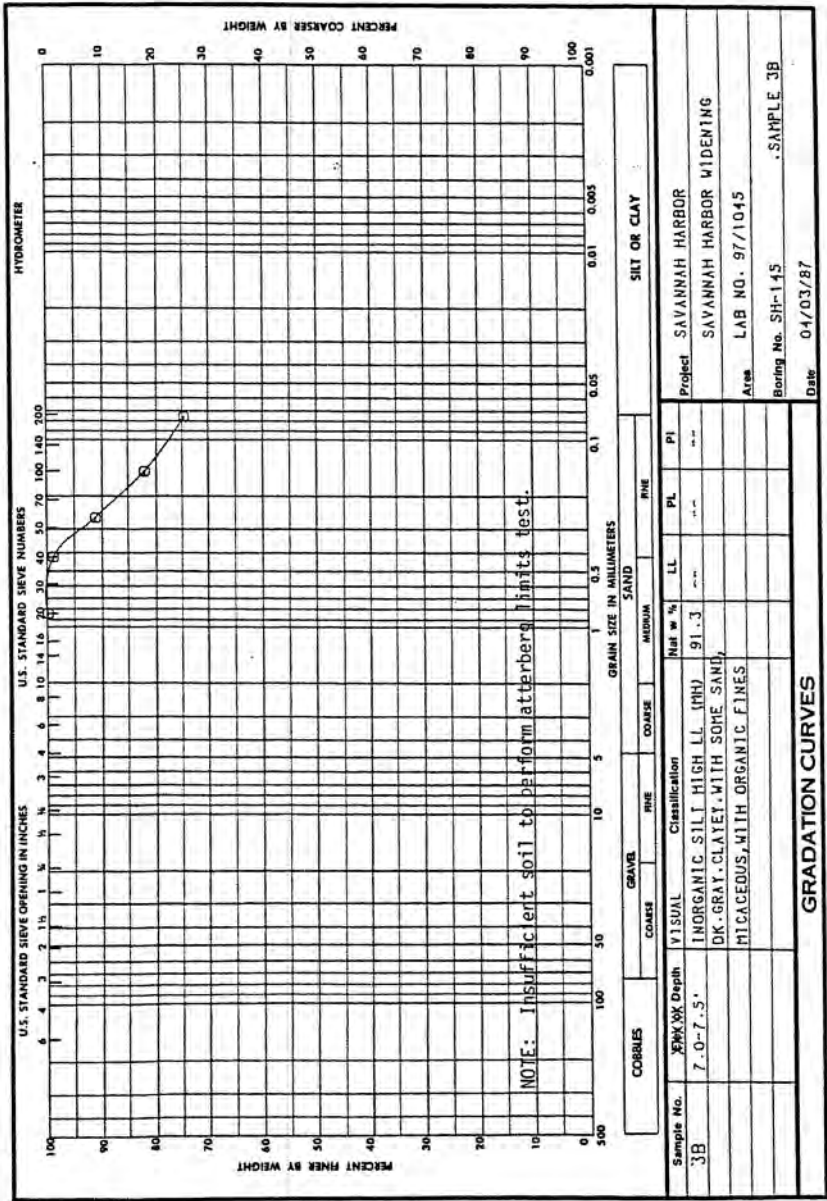
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ENG FORM 2087  
1 MAY 63

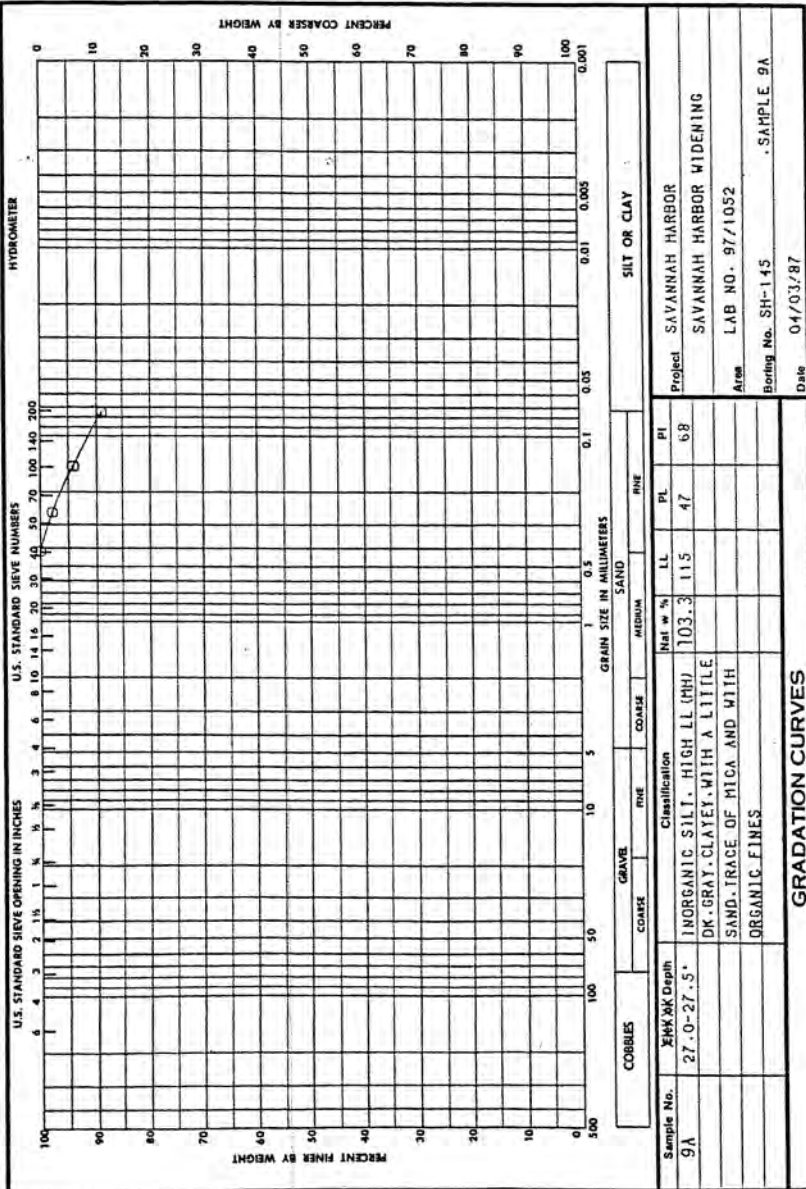
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

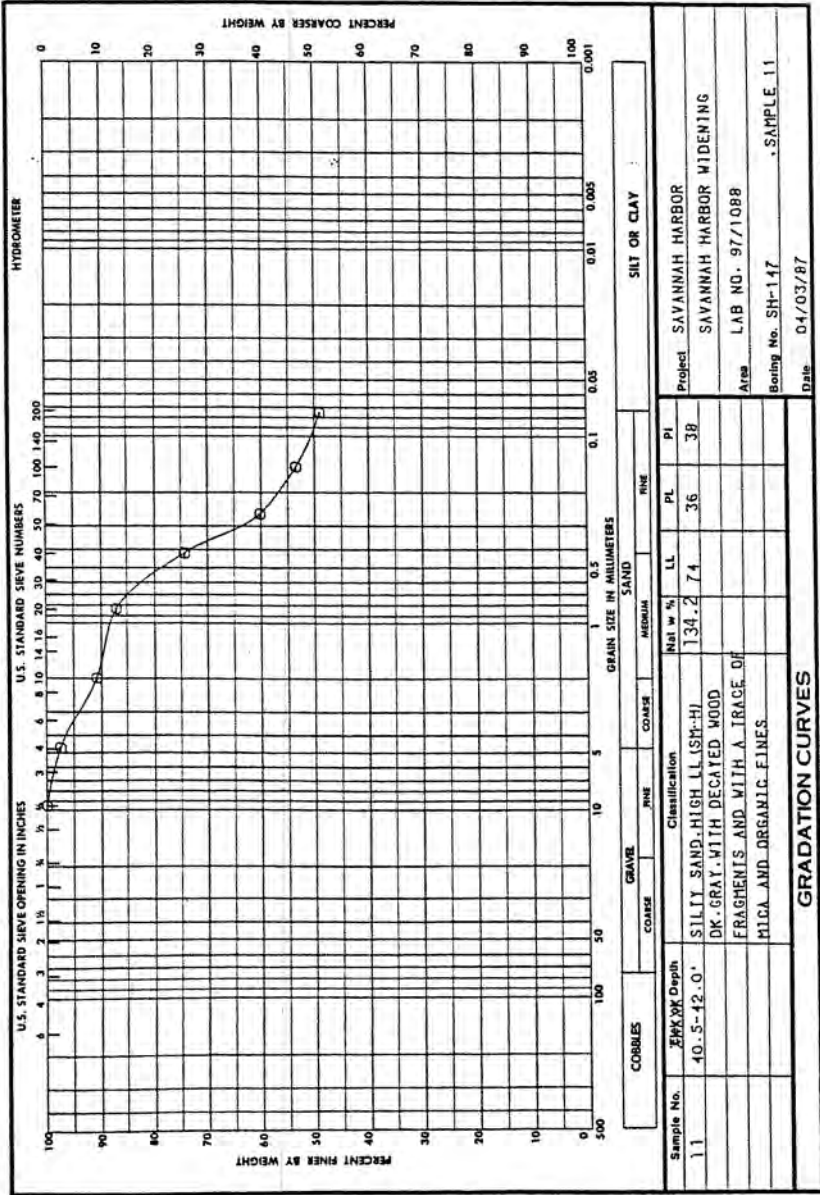


ENG FORM  
1 MAY 83 2087

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

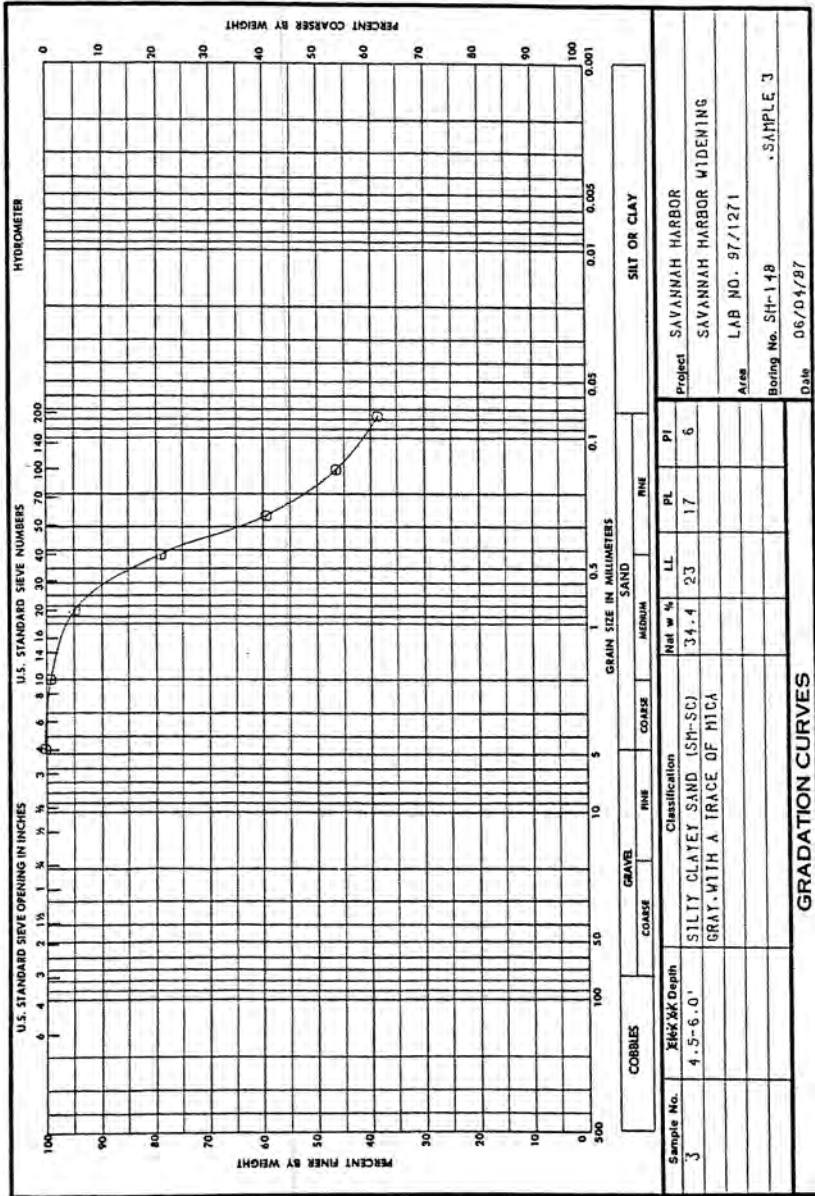
Req. No. SAS-EN-6S-87-23



ENG FORM 2087  
1 MAY 83

W.O. No. 5193  
Req. No. SAS-EN-65-87-23

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



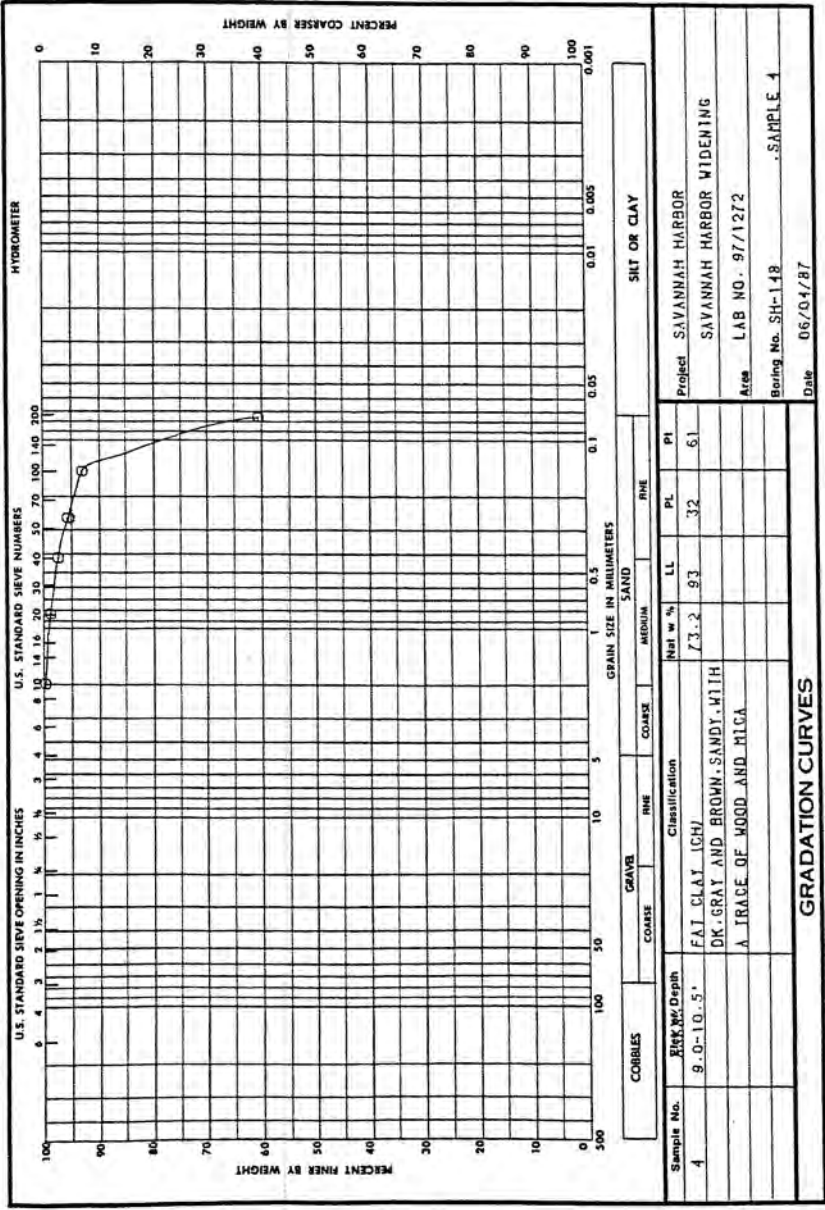
ENG FORM 2087  
1 MAY 63



W.O. No. 5193

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

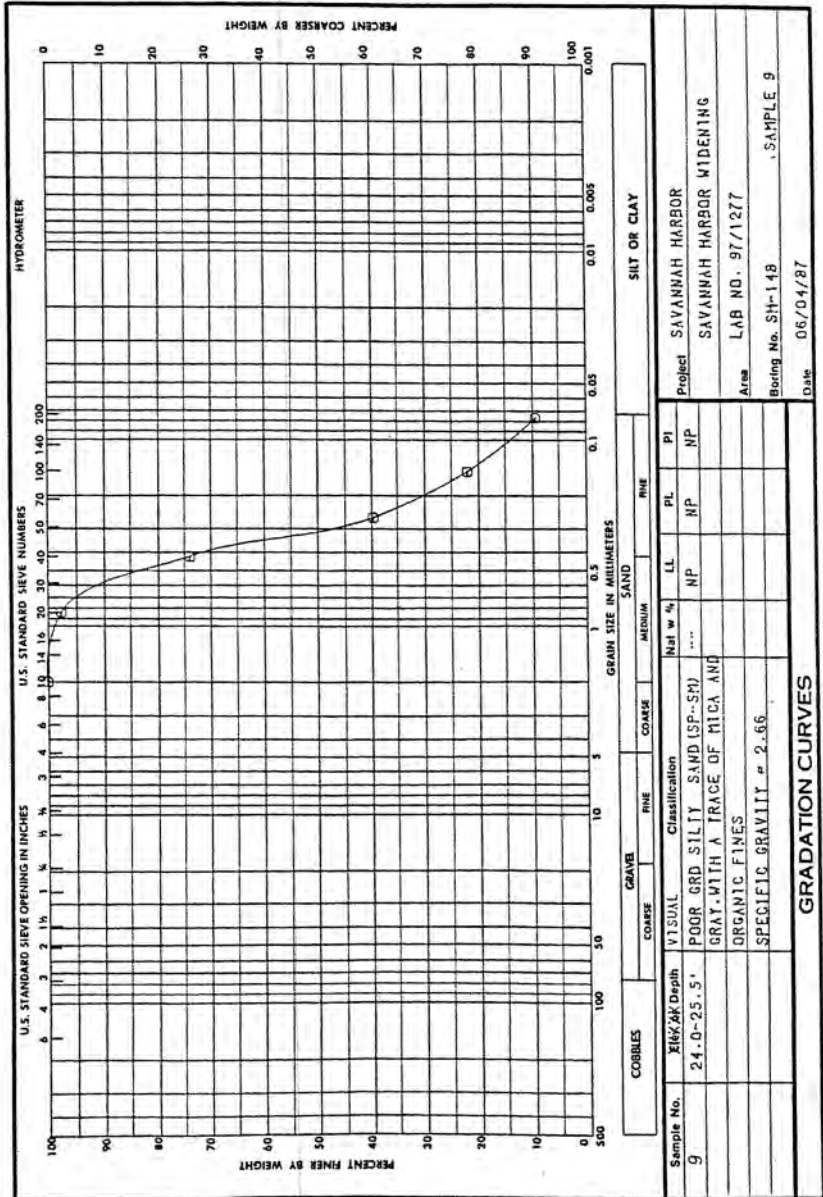
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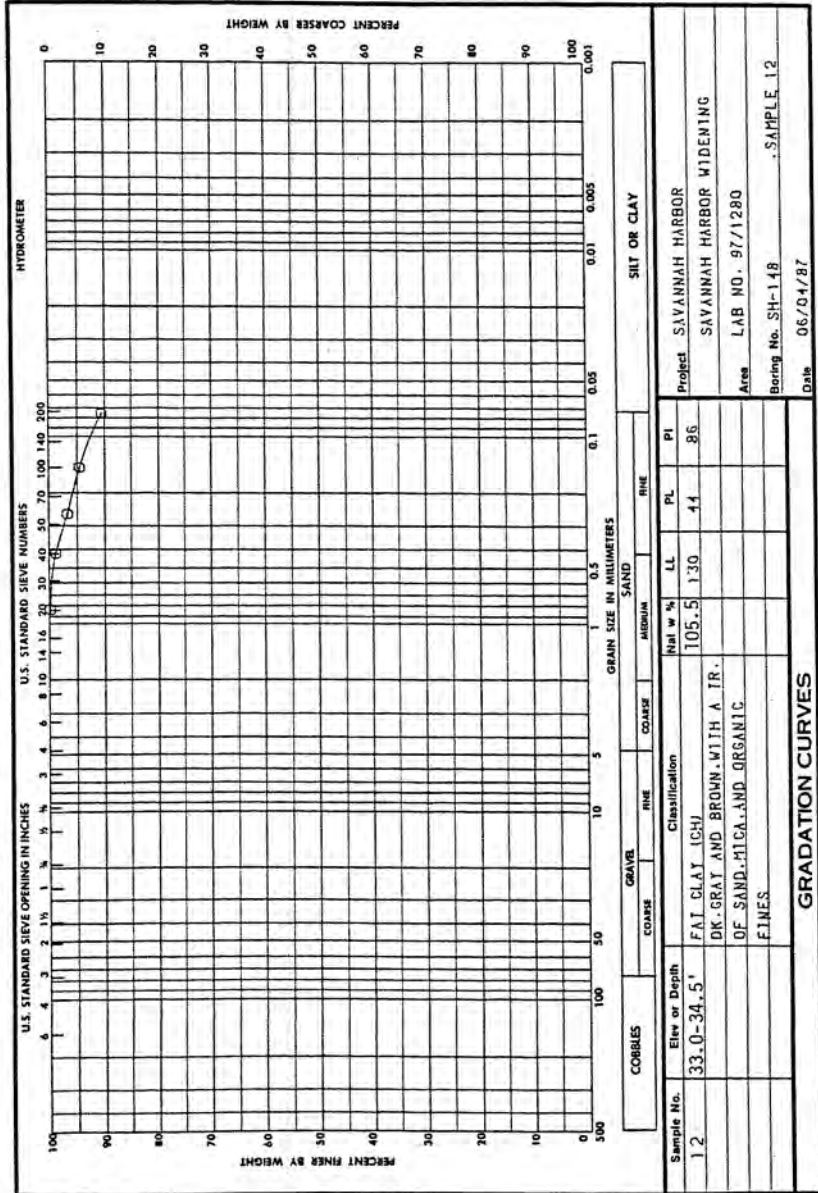
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
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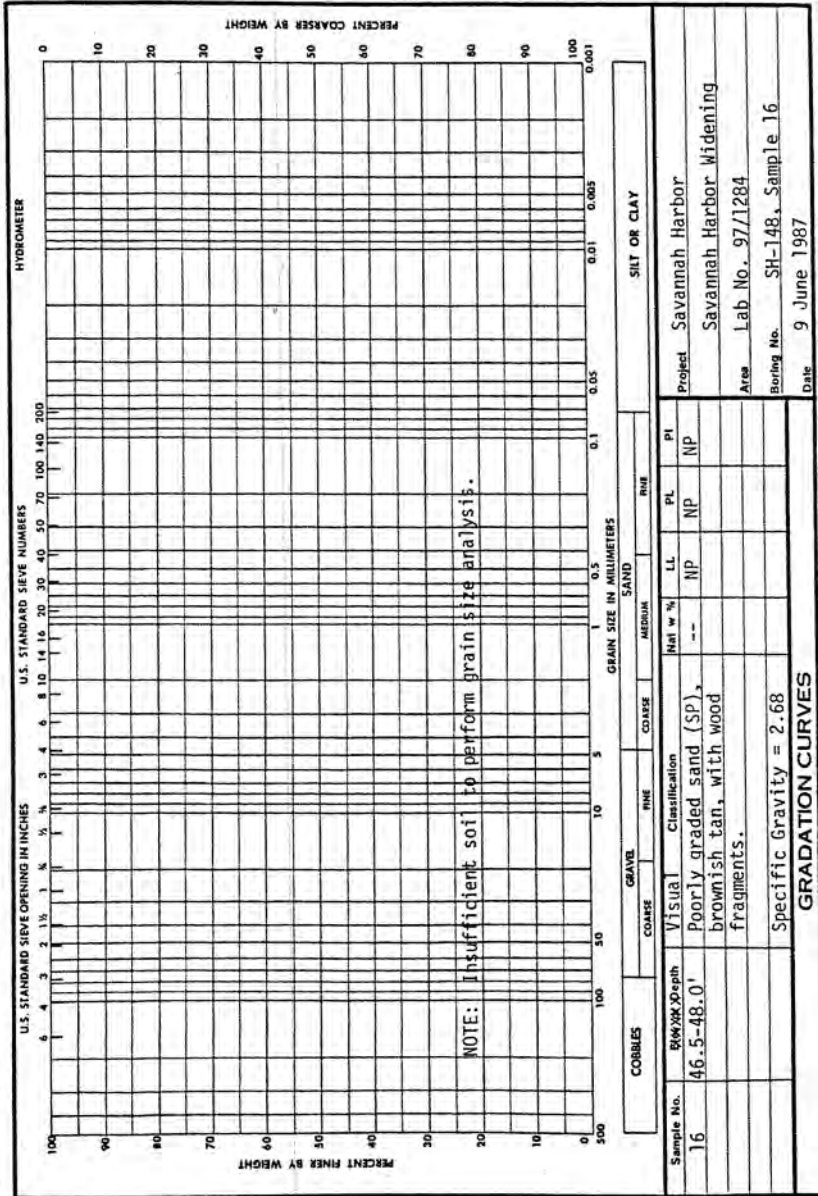
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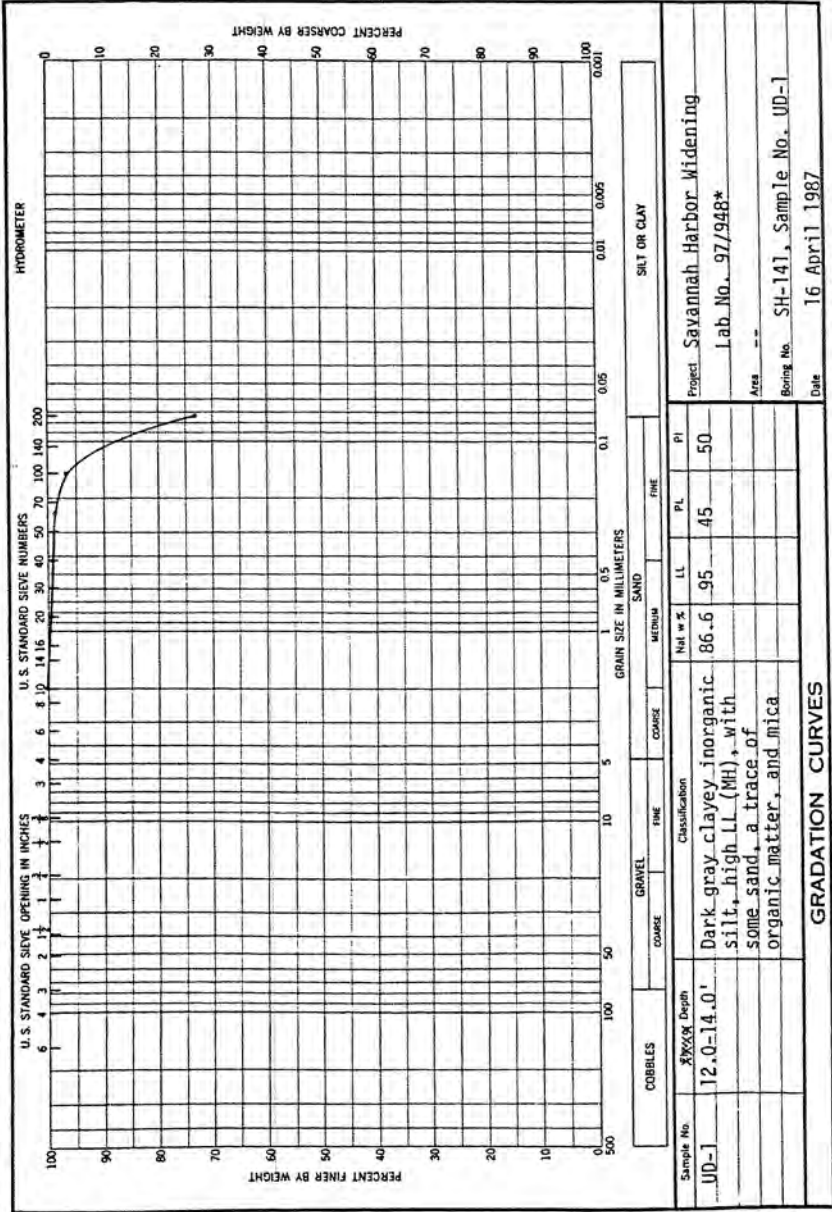
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



|                                                                                                                                 |          |                                                           |             |                      |
|---------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------|-------------|----------------------|
| <b>GENERAL TEST REPORT</b><br>U.S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC<br>CORPS OF ENGINEERS<br>MARIETTA, GEORGIA |          | DISTRICT/OFFICE<br>Savannah<br>CONTRACT NO.<br>---        |             |                      |
| PROJECT<br>Savannah Harbor<br>Savannah Harbor Widening                                                                          |          | DATE REPORTED<br>8 April 1987<br>WORK ORDER NO.<br>5193   |             |                      |
| TYPE SAMPLE SOILS:<br>Jar Samples of Disturbed Soils                                                                            |          | REQN. NO.<br>SAS-EN-GS-87-23                              |             |                      |
| SOURCE<br>HOLE NO: SH -141, 145, 146 and 147                                                                                    |          | BASE UNIT COST<br>--                                      |             |                      |
| FOR USE AS<br>Investigation                                                                                                     |          | DATE SAMPLE RECEIVED<br>27 Feb thru 16 Mar 1987           |             |                      |
| TESTED FOR<br>Lab Classification and Field Moisture                                                                             |          | LAB NO.<br>97/1007-1088                                   |             |                      |
| <input type="checkbox"/> MEETS SPECIFICATIONS                                                                                   |          | <input type="checkbox"/> FAILS SPECIFICATIONS (See below) |             |                      |
| N/A                                                                                                                             |          |                                                           |             |                      |
| Lab. No.                                                                                                                        | Hole No. | Sample No.                                                | Depth (Ft.) | Moisture Content (%) |
| 97/                                                                                                                             |          |                                                           |             |                      |
| 1007                                                                                                                            | SH-141   | 5                                                         | 9.0/10.5    | 90.8*                |
| 1008                                                                                                                            | "        | 6                                                         | 13.5/15.0   | 66.1                 |
| 1018                                                                                                                            | "        | 16A                                                       | 52.5/53.5   | 39.0                 |
|                                                                                                                                 |          |                                                           |             |                      |
| 1044                                                                                                                            | SH-145   | 3A                                                        | 6.0/7.0     | 28.4                 |
| 1045                                                                                                                            | "        | 3B                                                        | 7.0/7.5     | 91.3*                |
| 1047                                                                                                                            | "        | 5                                                         | 13.5/15.0   | 18.9                 |
| 1050                                                                                                                            | "        | 7                                                         | 21.0/22.5   | 94.4                 |
| 1052                                                                                                                            | "        | 9A                                                        | 27.0/27.5   | 103.3*               |
|                                                                                                                                 |          |                                                           |             |                      |
| 1055                                                                                                                            | SH-146   | 4                                                         | 13.5/15.0   | 84.5                 |
|                                                                                                                                 |          |                                                           |             |                      |
| 1079                                                                                                                            | SH-147   | 2                                                         | 3.0/4.5     | 29.3                 |
| 1082                                                                                                                            | "        | 5                                                         | 12.0/15.0   | 96.7                 |
| 1088                                                                                                                            | "        | 11                                                        | 40.5/42.0   | 134.2*               |
|                                                                                                                                 |          |                                                           |             |                      |
| REMARKS:<br><br>*See lab classification data on ENG Form 2087.                                                                  |          |                                                           |             |                      |
| REPORTED BY<br><input type="checkbox"/> PHONE <input type="checkbox"/> WIRE<br>DATE _____                                       |          | TESTED BY<br>WB, JL<br>SAMPLED BY<br>District             |             | CHECKED BY<br>ES     |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA 30060-3112

Work Order No. 5193  
Reqn No. SAS EN GS 87-23



ENG FORM 2087  
1 MAY 83

\*R Triaxial Test

Work Order No. 5193  
Reqn No. SAS EN GS 87-23

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA 30060-3112

| Test No.                               | 1                                  | 2       | 3       |   |
|----------------------------------------|------------------------------------|---------|---------|---|
| Initial                                |                                    |         |         |   |
| Water content                          | $w_0$ 94.9 %                       | 89.1 %  | 75.7 %  | % |
| Void ratio                             | $e_0$ 2.468                        | 2.326   | 1.968   |   |
| Saturation                             | $S_0$ 100.0 %                      | 99.6 %  | 100.0 % | % |
| Dry density, lb/cu ft                  | $\gamma_d$ 46.8                    | 48.8    | 54.7    |   |
| Before Shear                           |                                    |         |         |   |
| Water content                          | $w_c$ 89.2 %                       | 80.3 %  | 58.3 %  | % |
| Void ratio                             | $e_c$ 2.318                        | 2.087   | 1.516   |   |
| Saturation                             | $S_c$ 100.0 %                      | 100.0 % | 100.0 % | % |
| Final back pressure, T/sq ft           | $u_0$ 5.00                         | 5.00    | 5.00    |   |
| Final                                  |                                    |         |         |   |
| Water content                          | $w_f$ 89.2 %                       | 80.3 %  | 58.3 %  | % |
| Void ratio                             | $e_f$ 2.318                        | 2.087   | 1.516   |   |
| Minor principal stress, T/sq ft        | $\sigma_3$ 0.50                    | 1.00    | 2.00    |   |
| Max deviator stress, T/sq ft           | $(\sigma_1 - \sigma_3)_{max}$ 0.83 | 0.96    | 1.61    |   |
| Time to failure, min                   | $t_f$ 45                           | 35      | 35      |   |
| Rate of strain, percent/min            | 0.10                               | 0.11    | 0.11    |   |
| Strain @ $(\sigma_1 - \sigma_3)_{max}$ | 4.4                                | 3.7     | 3.7     |   |
| Ult deviator stress, T/sq ft           | $(\sigma_1 - \sigma_3)_{ult}$ 0.55 | 0.66    | 1.18    |   |
| Initial diameter, in.                  | $D_0$ 1.38                         | 1.38    | 1.38    |   |
| Initial height, in.                    | $H_0$ 3.08                         | 3.08    | 3.08    |   |

**Shear Strength Parameters**

Intal  $\phi = 11.5^\circ$  Effective  $\phi = 29.8^\circ$

$\tan \phi = 0.203$   $0.554$

$c = 0.21$   $0.0$  T/sq ft

Method of saturation \_\_\_\_\_

Back Pressure \_\_\_\_\_ %

☐ Controlled stress

☒ Controlled strain

|                           |                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------|
| Type of test <b>R</b>     | Type of specimen <b>Undisturbed</b>                                                                  |
| Classification            | Dark gray clayey inorganic silt, high LL (MH), with some sand and a trace of organic matter and mica |
| LL <b>95</b>              | PL <b>45</b>                                                                                         |
| PI <b>50</b>              | <b>--</b>                                                                                            |
| <b>G<sub>s</sub> 2.60</b> |                                                                                                      |

Remarks See gradation curve on ENG Form 2087.

Project Savannah Harbor Widening

Lab No. 97/948

Area --

Boring No. SH-141 Sample No. UD-1

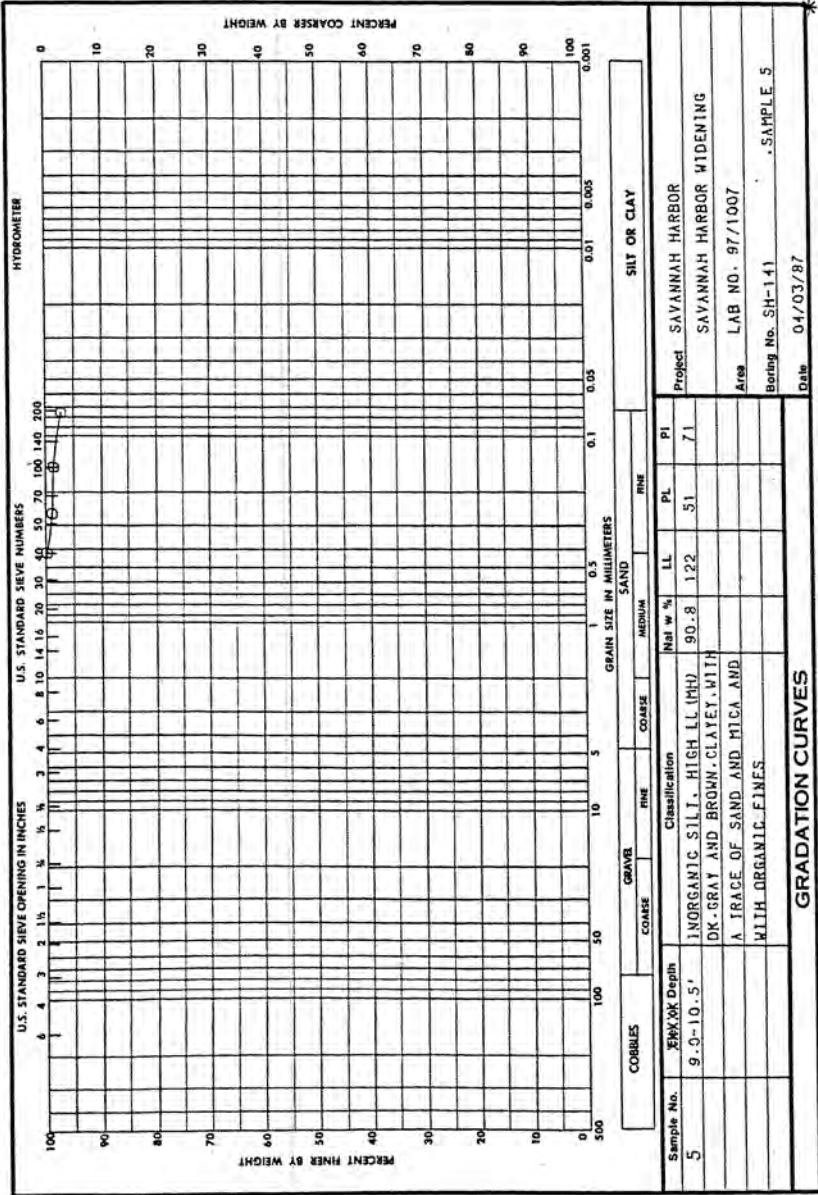
Depth 12.0-14.0' Date 16 April 1987

**TRIAXIAL COMPRESSION TEST REPORT**

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

W.O. No. 5193

Req. No. SAS-EN-GS-87-23

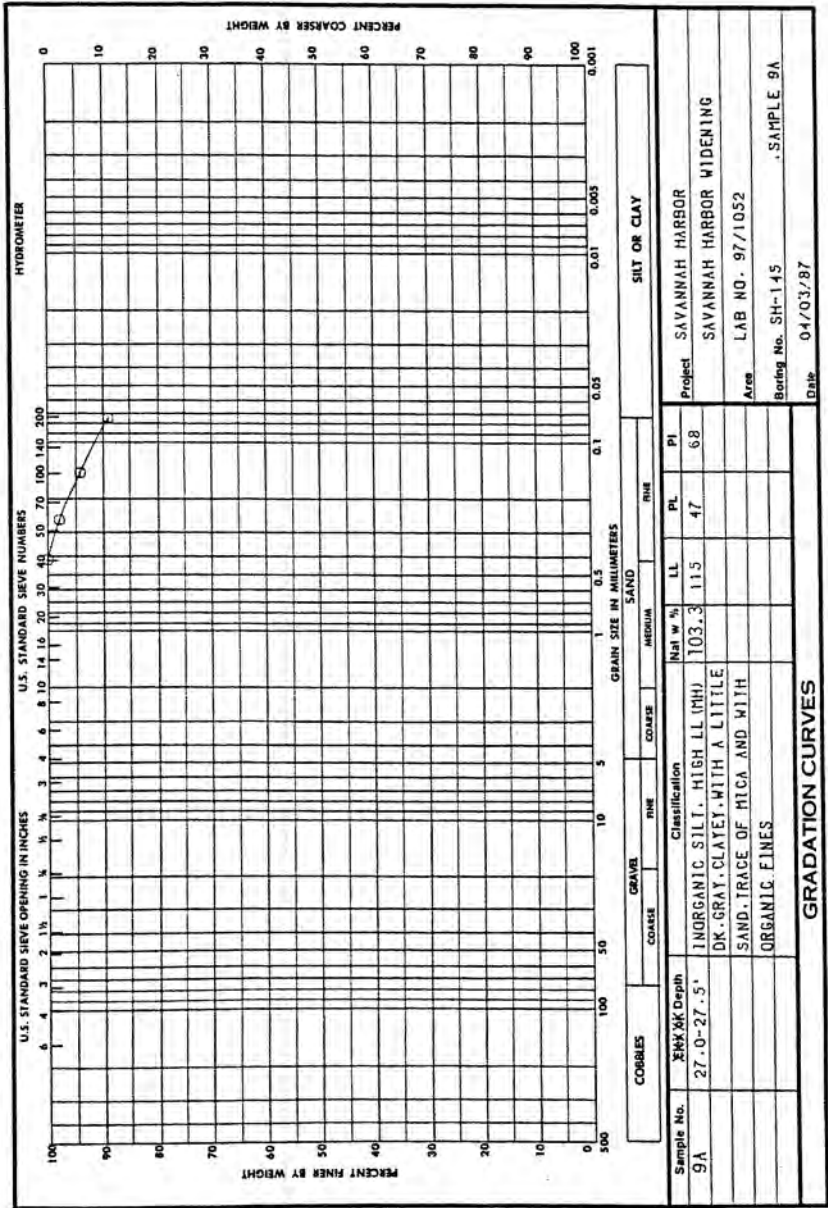


ENG FORM 2087  
1 MAY 83



W.O. No. 5193  
Req. No. SAS-EN-6S-87-23

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



ENG FORM 2087  
1 MAY 63

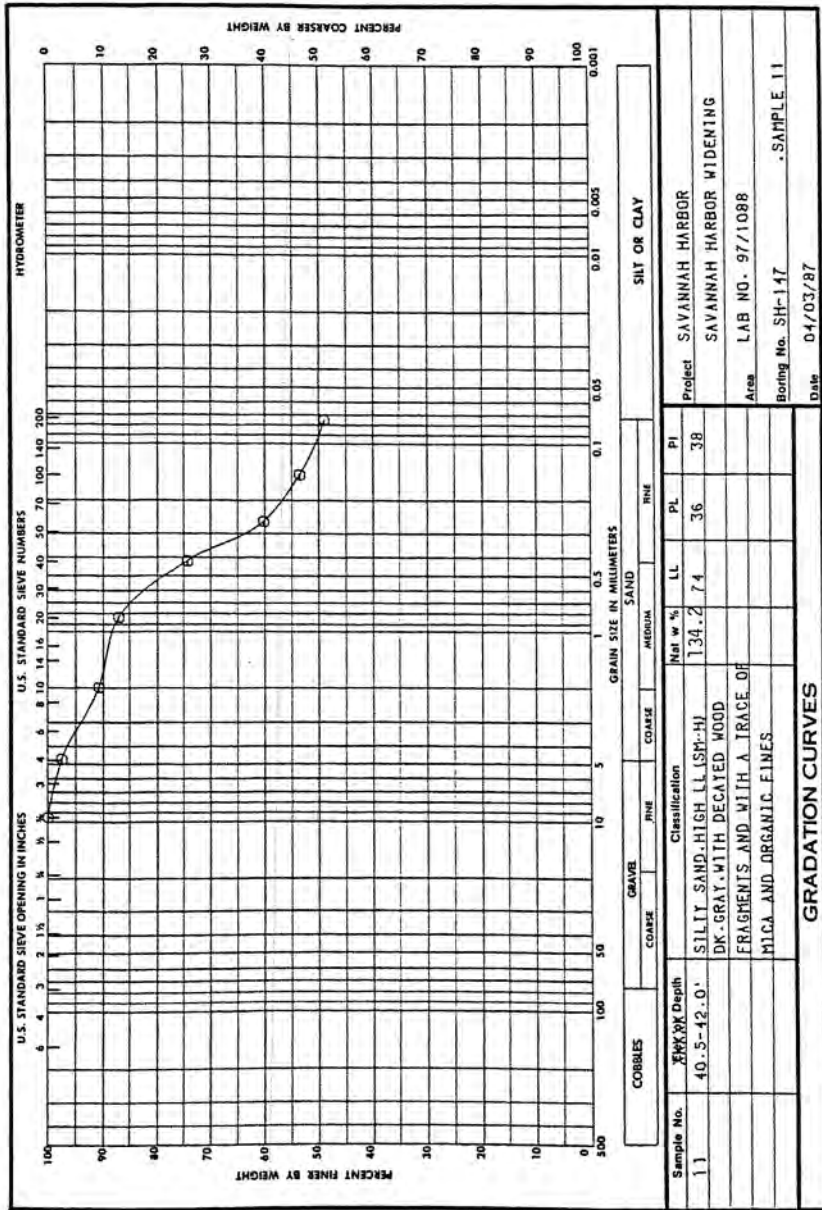




DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

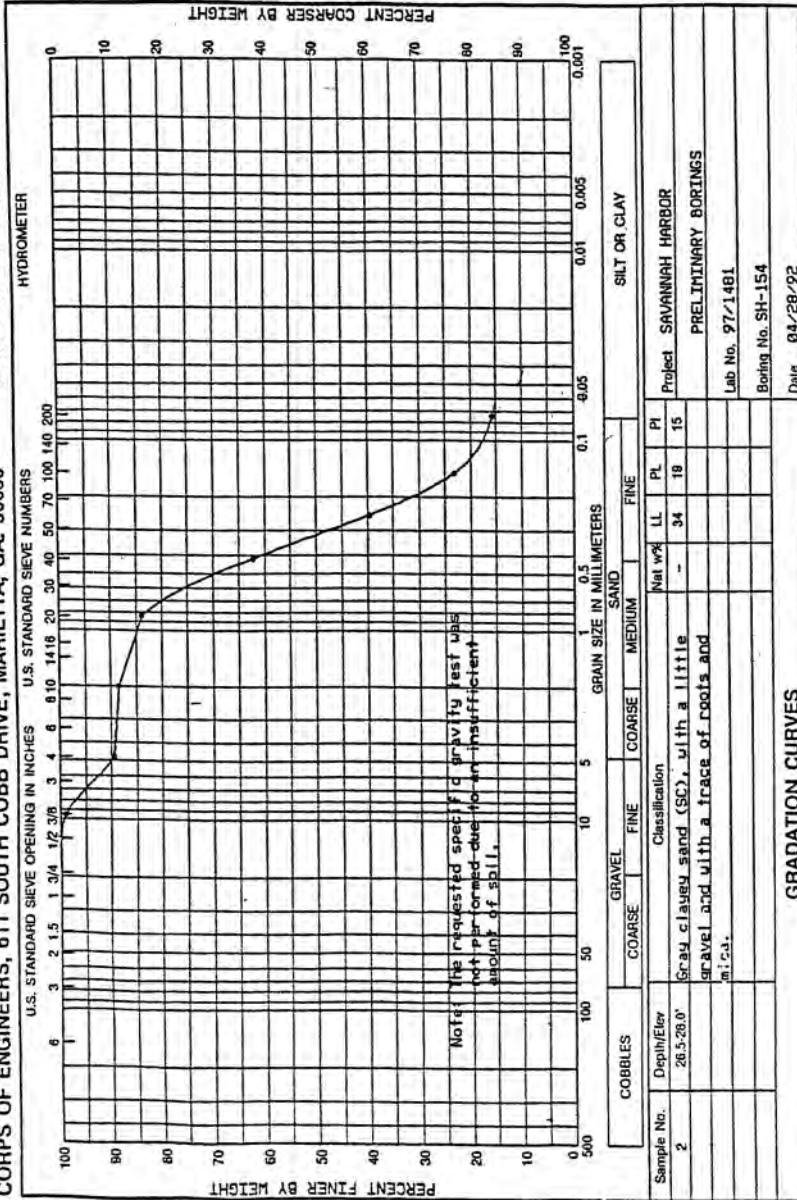
W.O. No. 5193

Req. No. SAS-EN-6S-87-23



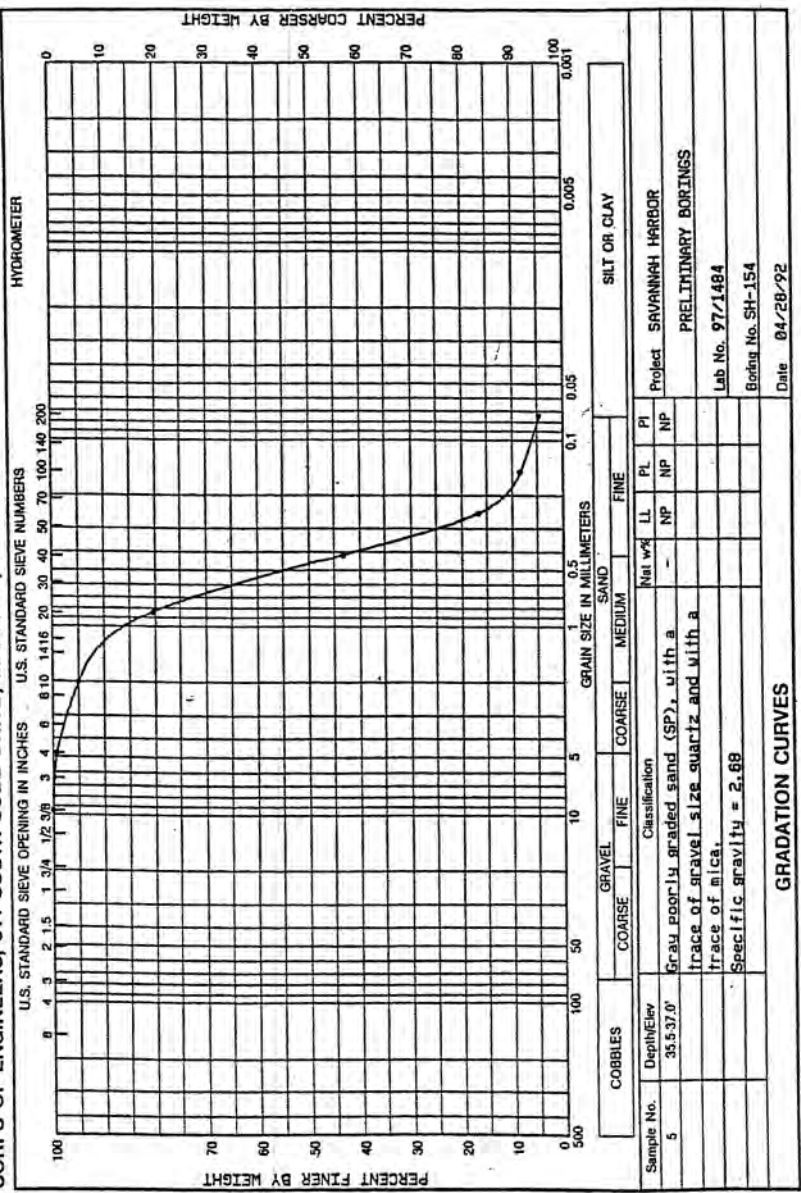
**WORK ORDER: 6585**  
**REQUISITION: EN-GG-92-37**

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS 611 SOUTH CORB DRIVE MARIETTA, GA. 30060



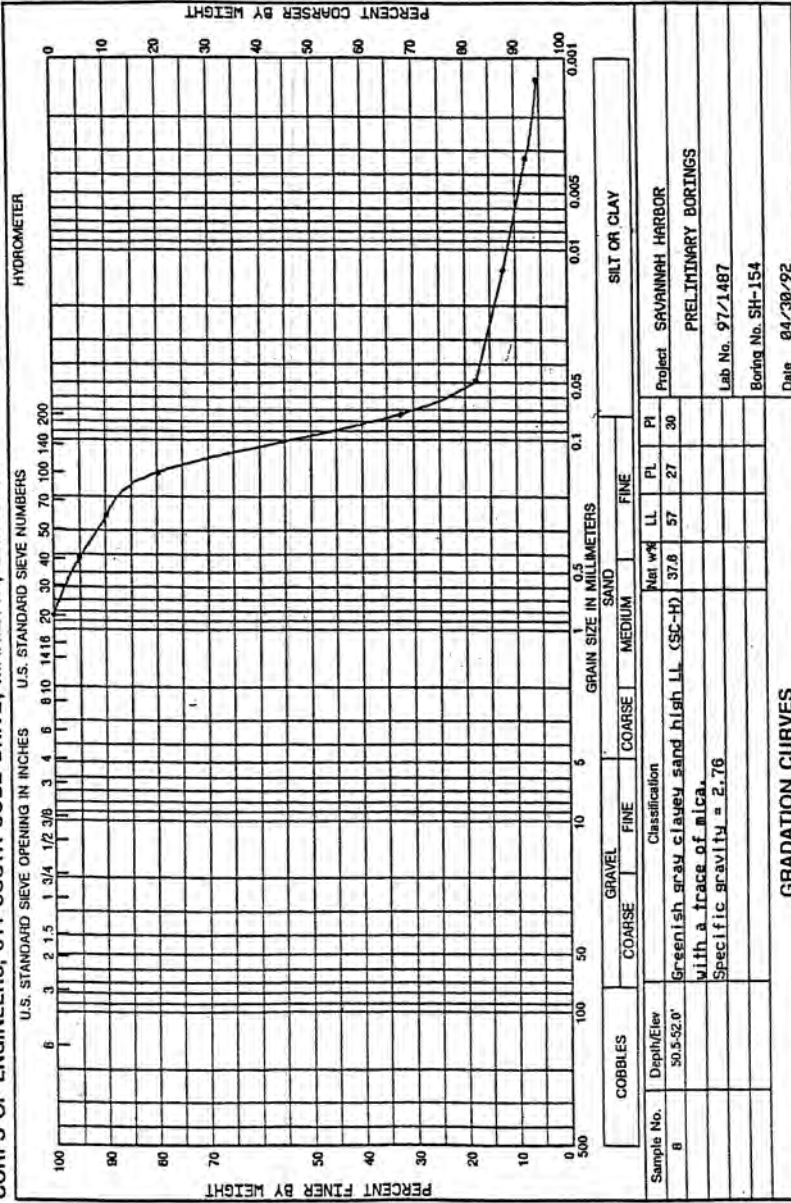
WORK ORDER: 6585  
REQUISITION: EN-66-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

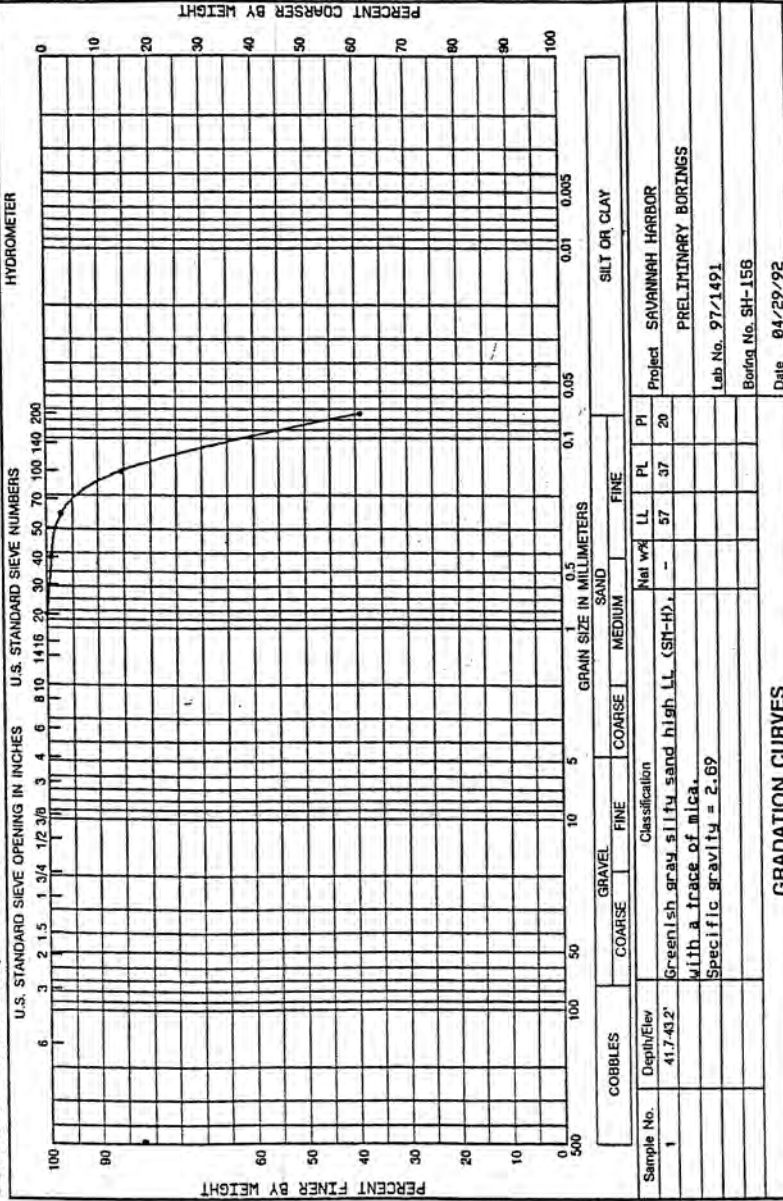
WORK ORDER: 8585  
REQUISITION: EN-66-92-37





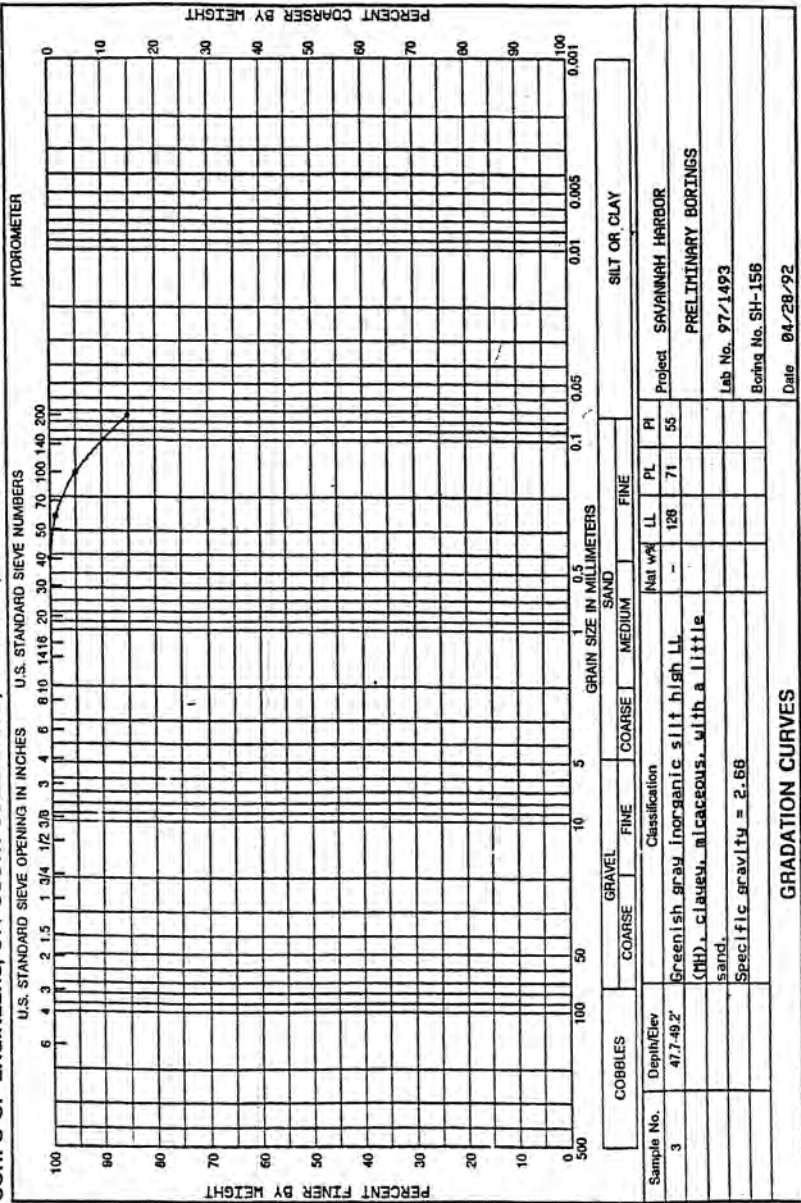
WORK ORDER: 8585  
 REQUISITION: EN-68-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





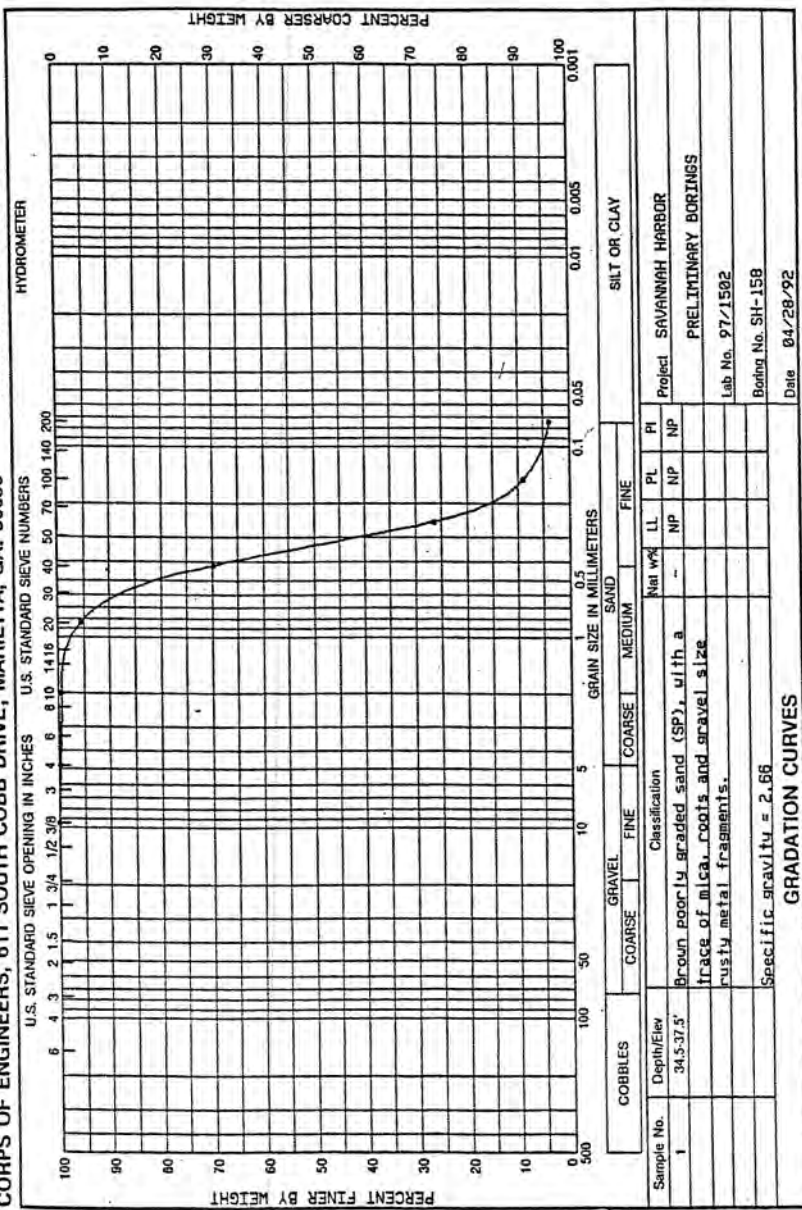
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6585  
REQUISITION: EN-66-92-37





WORK ORDER: 6565  
REQUISITION: EN-65-92-37

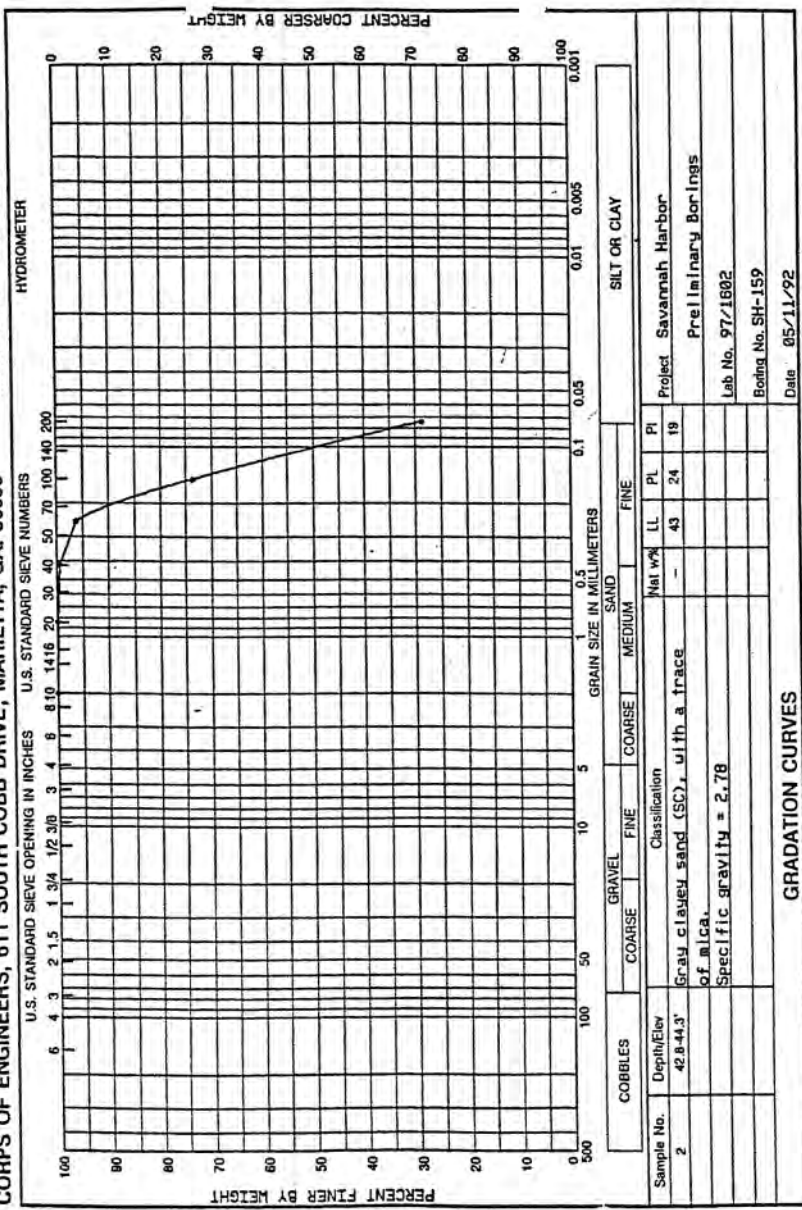
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





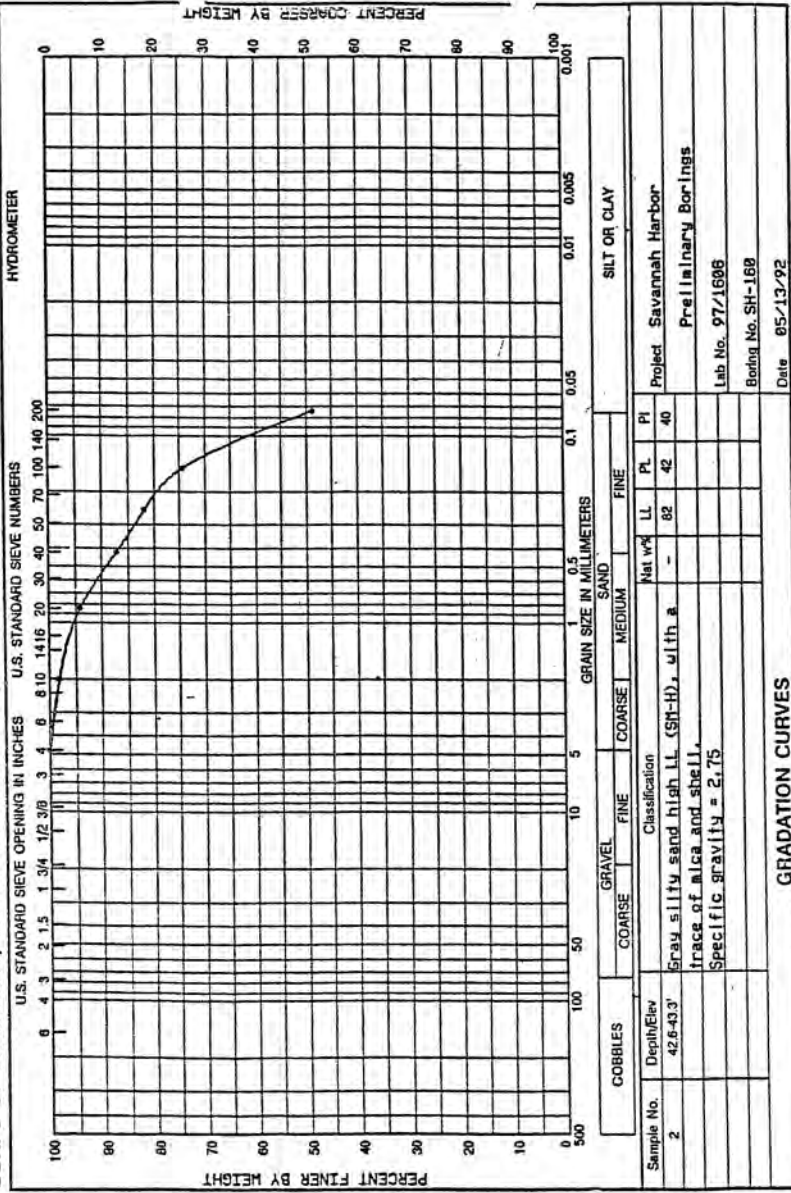
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REQUISITION: EN-66-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



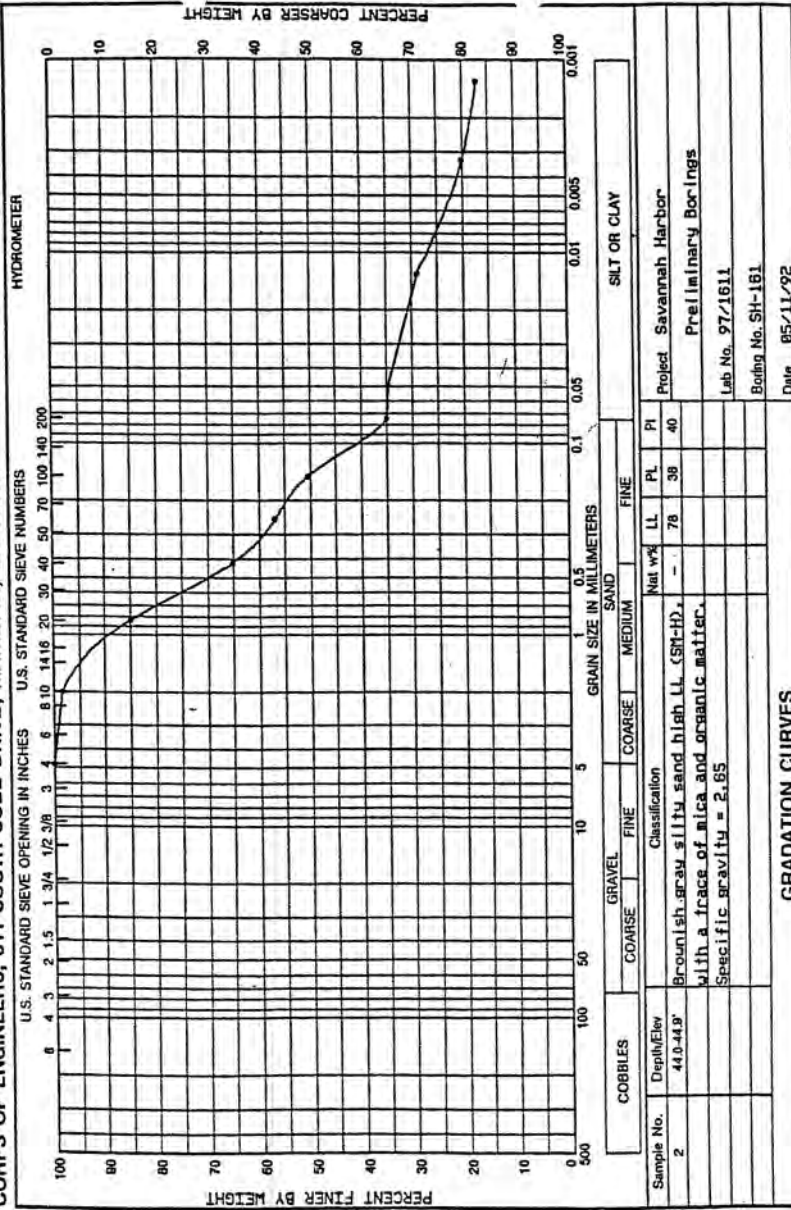
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



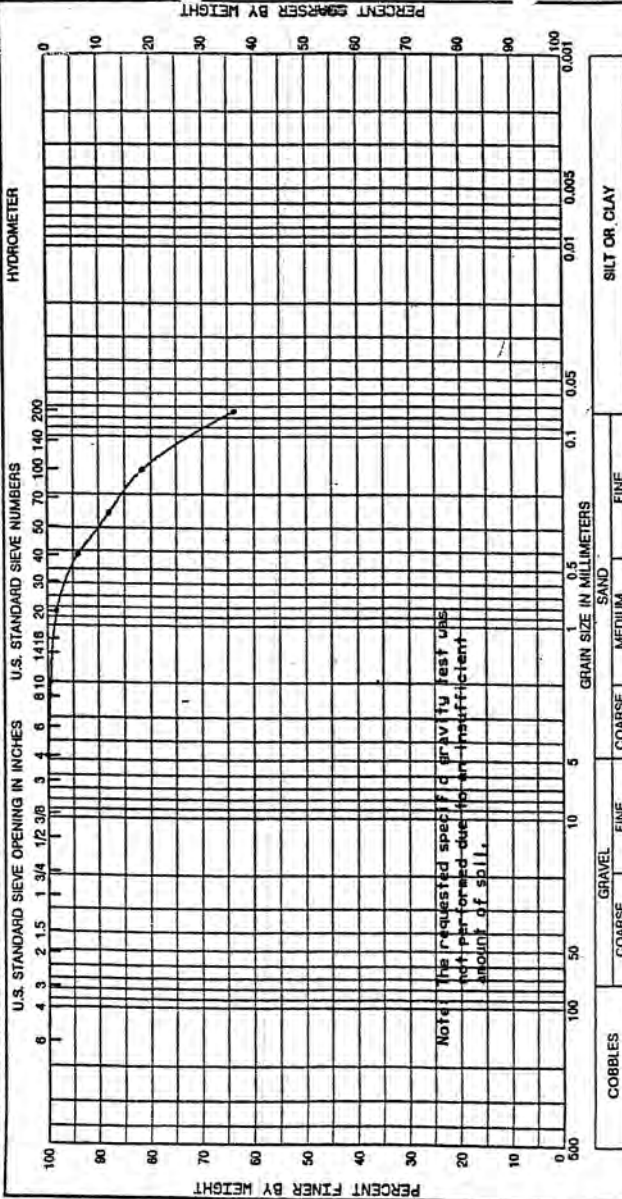
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



WORK ORDER: 8660  
REQUISITION: EN-66-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



|            |   |             |            |                |                                                                      |        |    |    |    |         |                     |
|------------|---|-------------|------------|----------------|----------------------------------------------------------------------|--------|----|----|----|---------|---------------------|
| Sample No. | 2 | Depth/Elev. | 43.0-43.4' | Classification | Gray inorganic silt high LL (MH), clayey sand, with a trace of mica. | Nat wt | LL | PL | PI | Project | Savannah Harbor     |
|            |   |             |            |                |                                                                      |        | 85 | 40 | 45 |         | Preliminary Borings |
|            |   |             |            |                |                                                                      |        |    |    |    |         | Lab No. 97/1615     |
|            |   |             |            |                |                                                                      |        |    |    |    |         | Boring No. SH-162   |
|            |   |             |            |                |                                                                      |        |    |    |    |         | Date 85/11/92       |

GRADATION CURVES

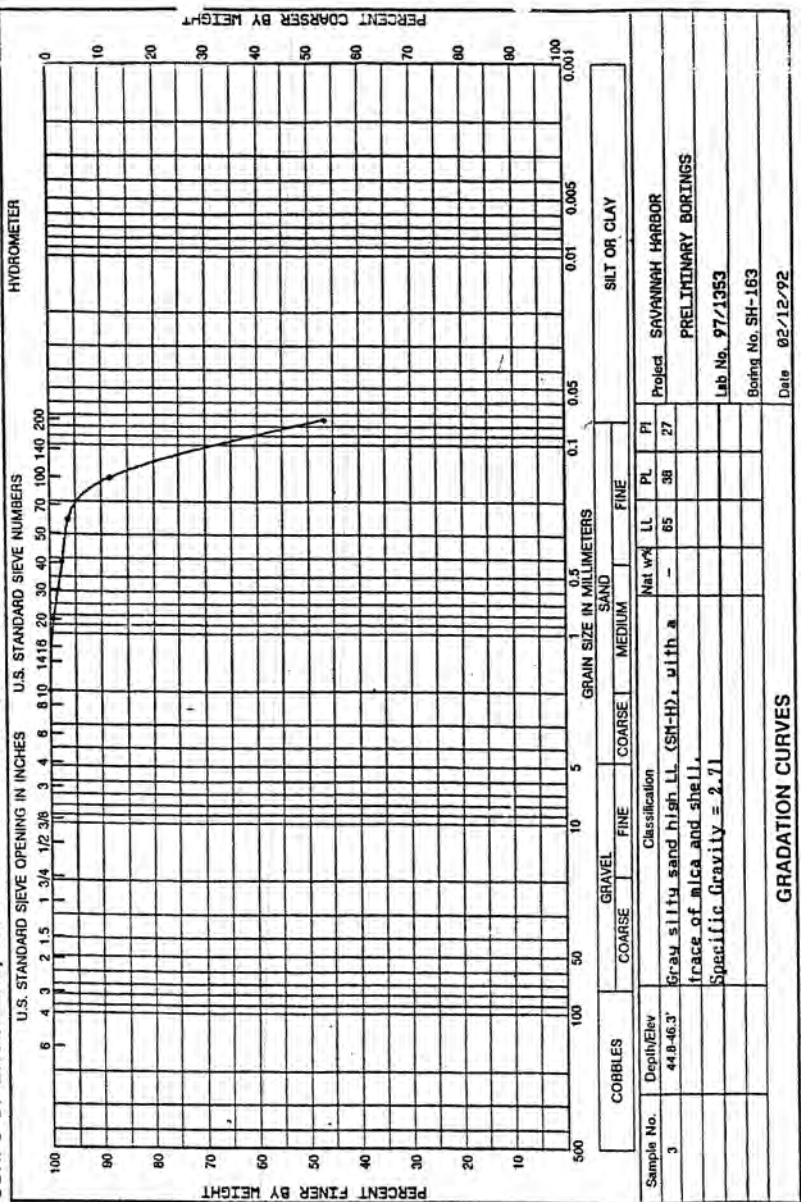






WORK ORDER: 6552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

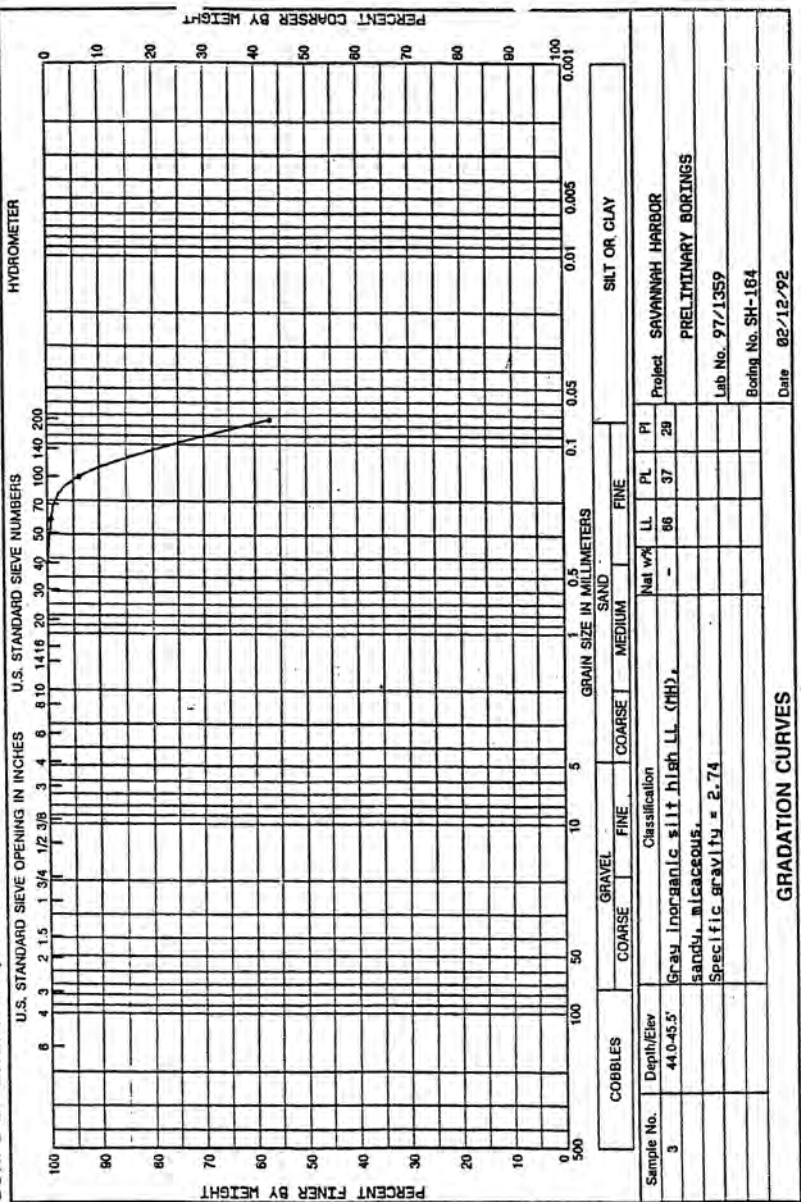






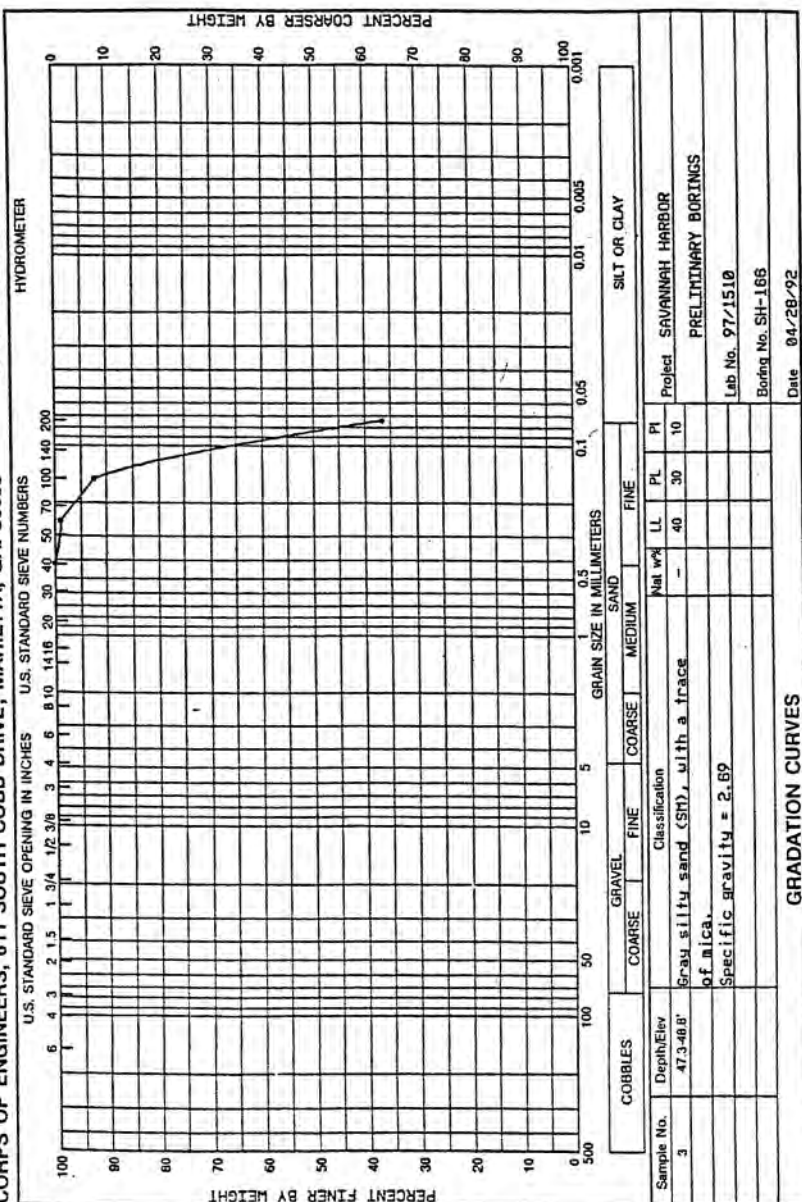
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-66-92-25



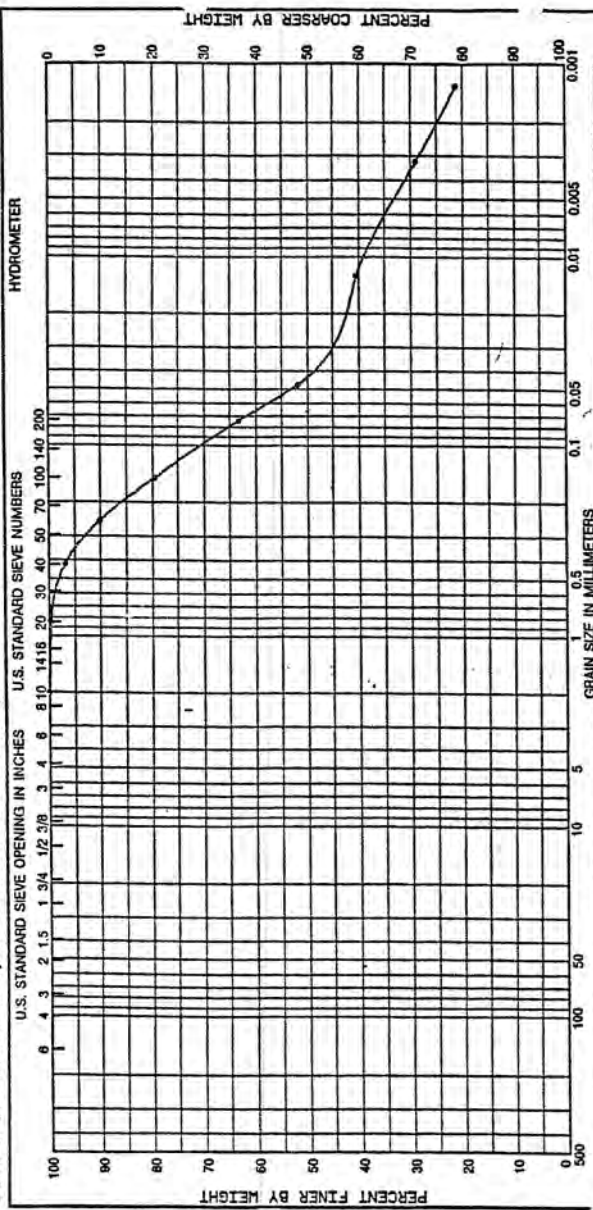
WORK ORDER: 6565  
REQUISITION: EN-GG-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6600  
REQUISITION: EN-66-92-53



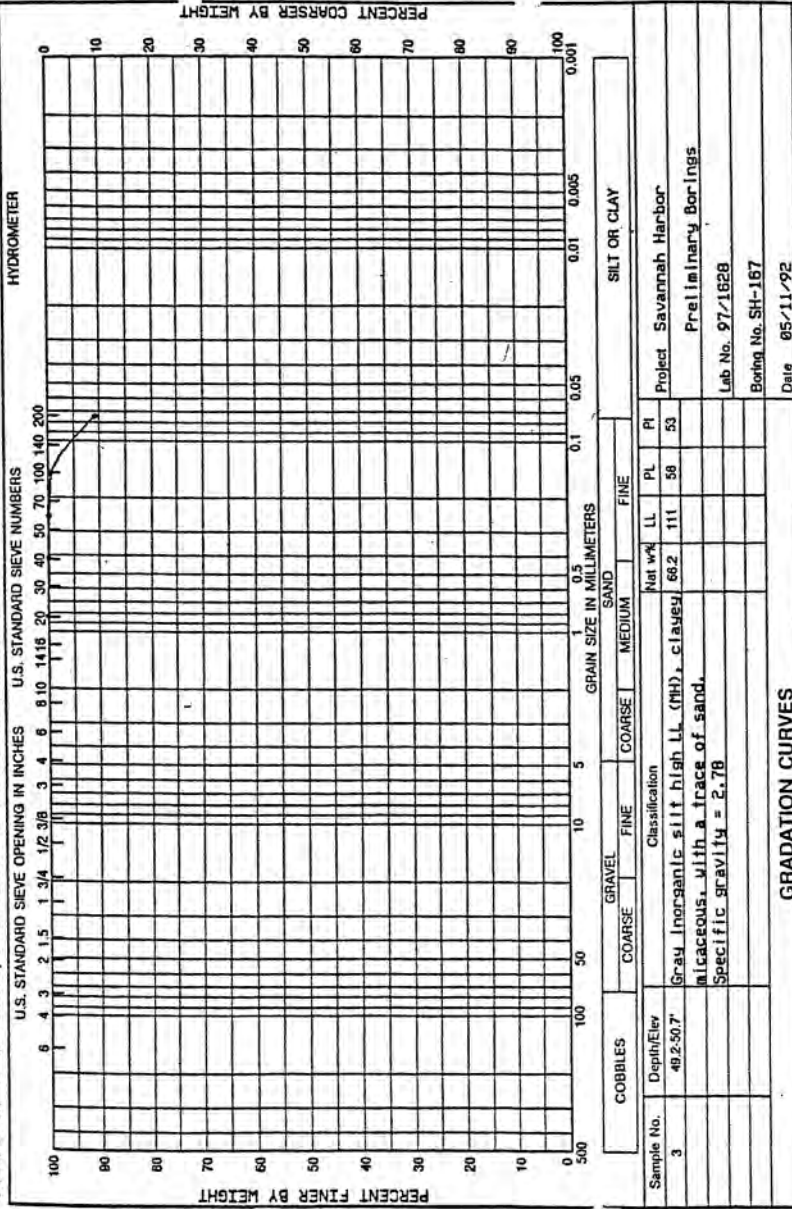
| COBBLES    |            | GRAVEL                                                                |      | SAND   |        | FINE |    | SILT OR CLAY |                         |
|------------|------------|-----------------------------------------------------------------------|------|--------|--------|------|----|--------------|-------------------------|
|            |            | COARSE                                                                | FINE | COARSE | MEDIUM | LL   | PL |              |                         |
| Sample No. | Depth/Elev | Classification                                                        |      |        |        |      |    |              |                         |
| 1          | 42.0-44.7' | Gray inorganic silt high LL (MH), clayey sandy, with a trace of mica. |      |        |        |      |    |              | Project Savannah Harbor |
|            |            | Specific gravity = 2.68                                               |      |        |        |      |    |              | Preliminary Borings     |
|            |            |                                                                       |      |        |        |      |    |              | Lab No. 97/1628         |
|            |            |                                                                       |      |        |        |      |    |              | Boring No. SH-167       |
|            |            |                                                                       |      |        |        |      |    |              | Date 05/11/92           |

GRADATION CURVES



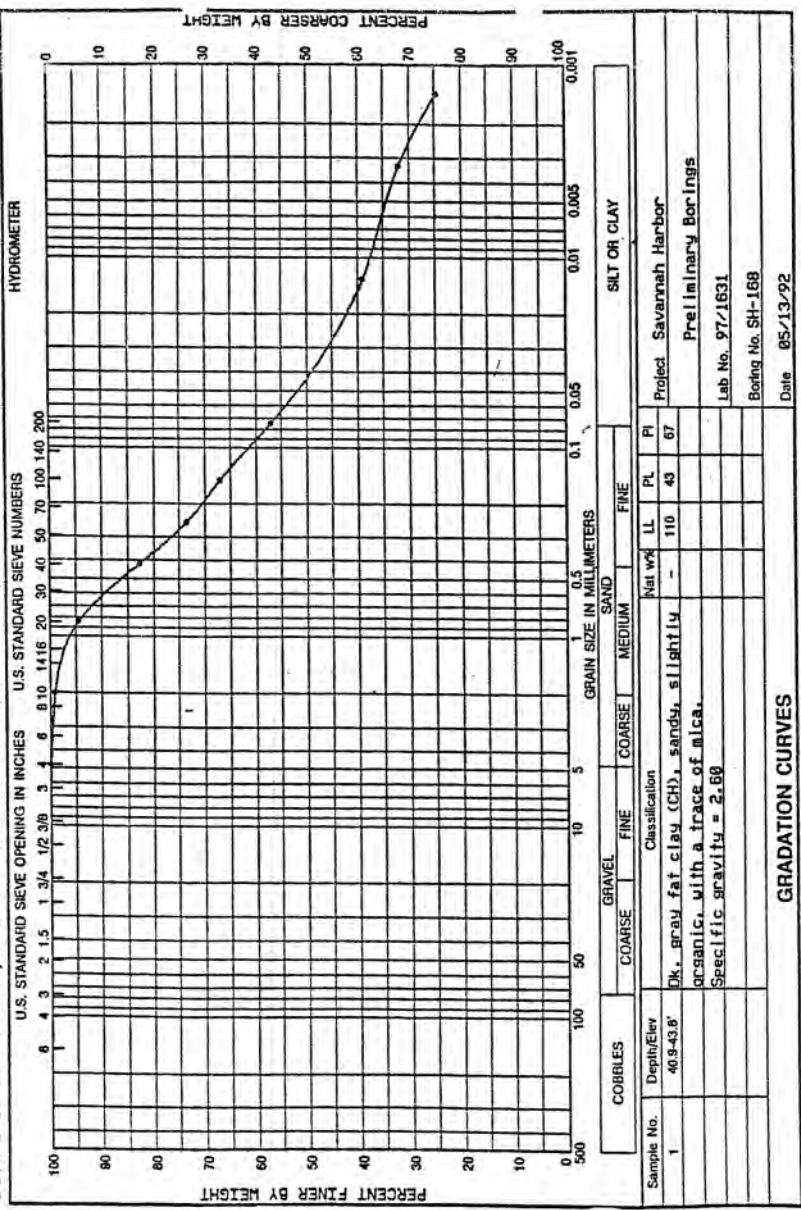
WORK ORDER: 6600  
REQUISITION: EN-66-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



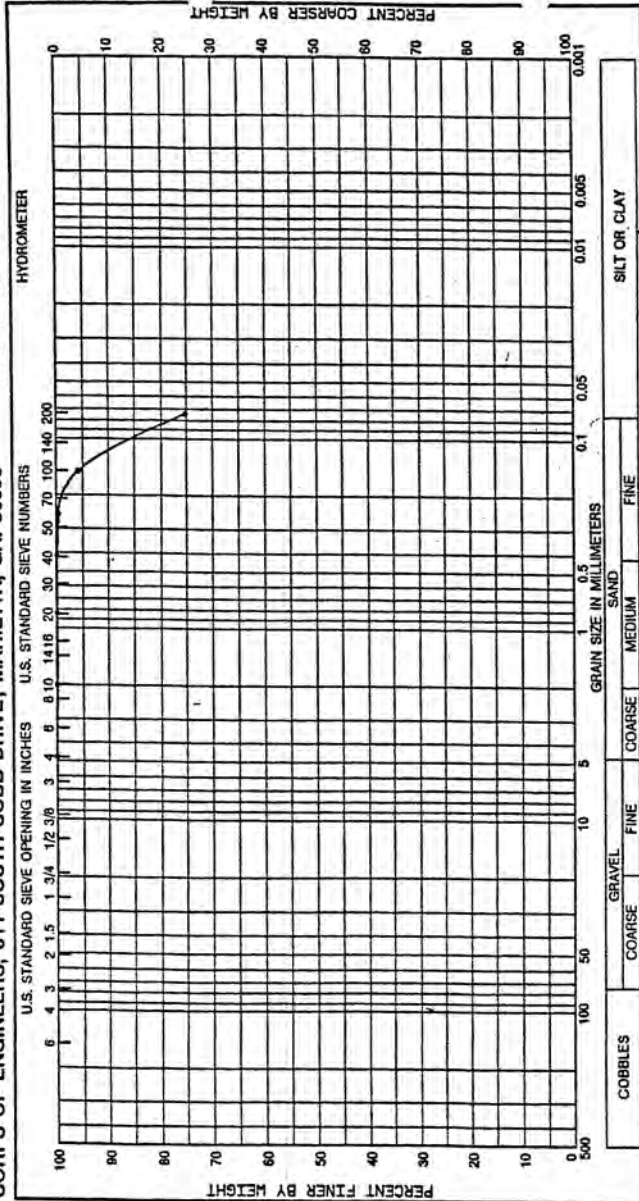
WORK ORDER: 8688  
REQUISITION: EN-68-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION, LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6800  
REQUISITION: EN-66-92-53



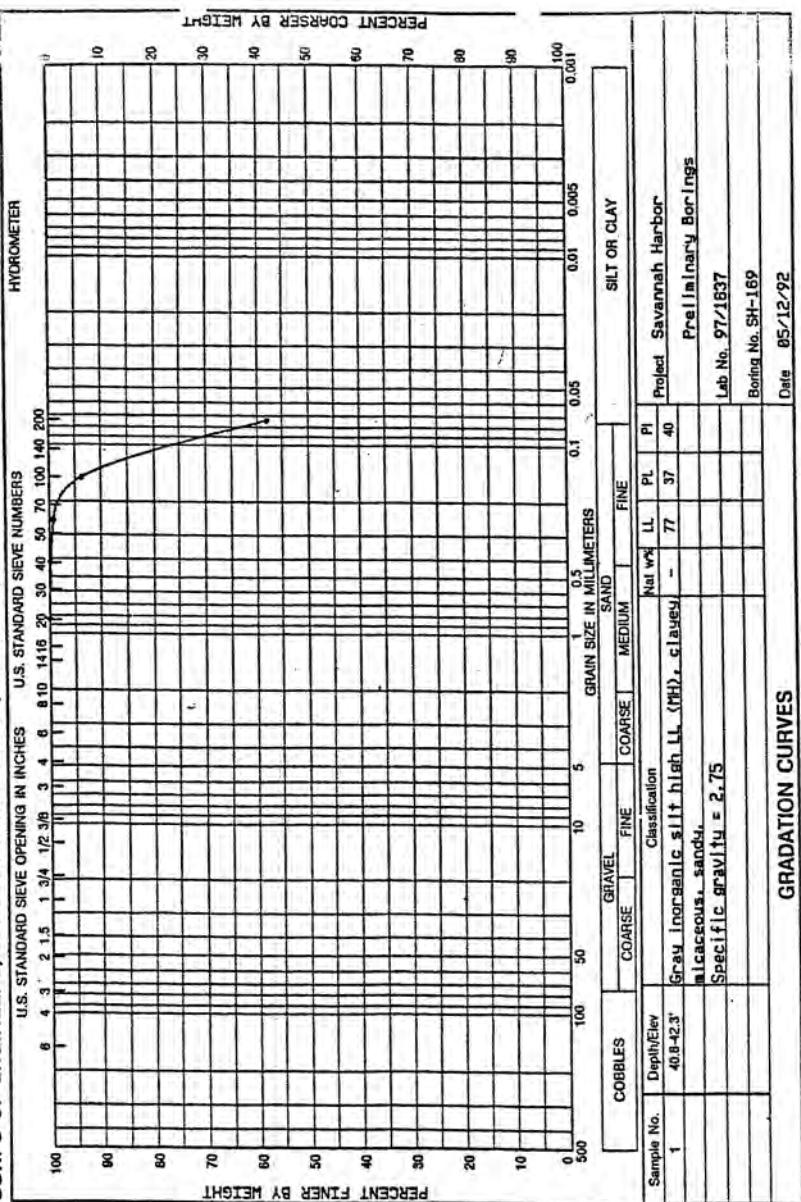
|                         |            |                                                                                             |        |    |    |    |
|-------------------------|------------|---------------------------------------------------------------------------------------------|--------|----|----|----|
| Sample No.              | Depth/Elev | Classification                                                                              | Nat wt | LL | PL | PI |
| 1                       | 53.5-55.0' | Gray inorganic silt high LL (NH), clayey micaceous, with some sand. Specific gravity = 2.75 | -      | 66 | 51 | 35 |
|                         |            |                                                                                             |        |    |    |    |
|                         |            |                                                                                             |        |    |    |    |
|                         |            |                                                                                             |        |    |    |    |
| GRADATION CURVES        |            |                                                                                             |        |    |    |    |
| Project Savannah Harbor |            |                                                                                             |        |    |    |    |
| Preliminary Borings     |            |                                                                                             |        |    |    |    |
| Lab No. 97/1635         |            |                                                                                             |        |    |    |    |
| Boring No. SH-168A      |            |                                                                                             |        |    |    |    |
| Date 05/12/92           |            |                                                                                             |        |    |    |    |





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

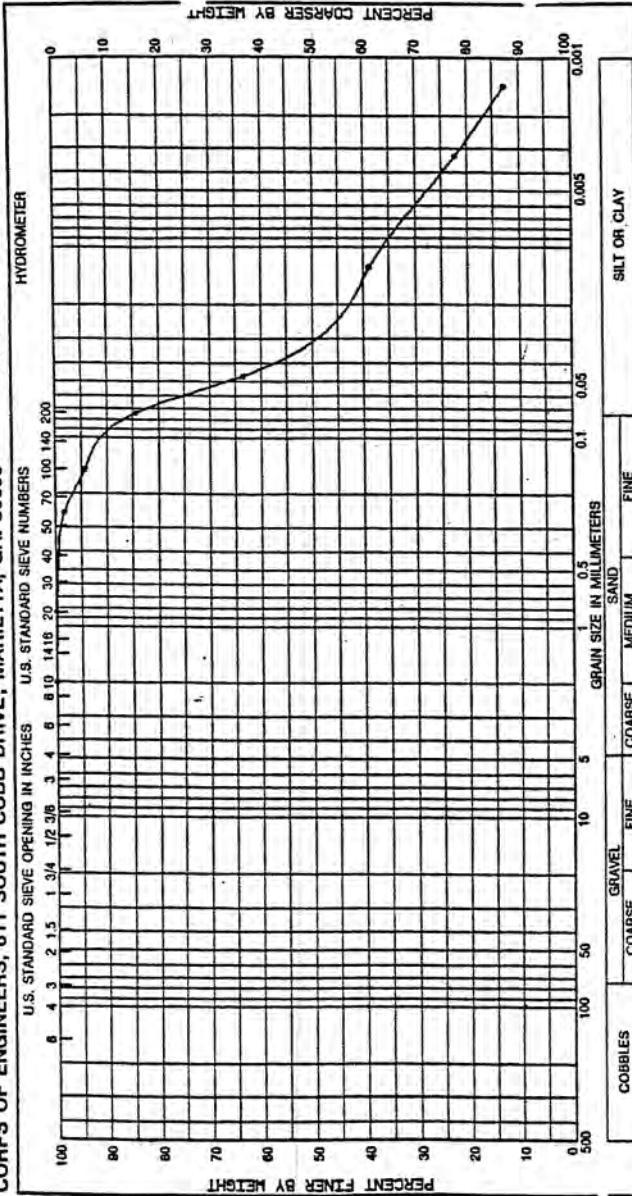
WORK ORDER: 6660  
 REQUISITION: EN-66-92-53





WORK ORDER: 0552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION - J RATORY  
CORPS OF ENGINEERS 611 SOUTH CORB DRIVE MARIETTA, GA. 30060

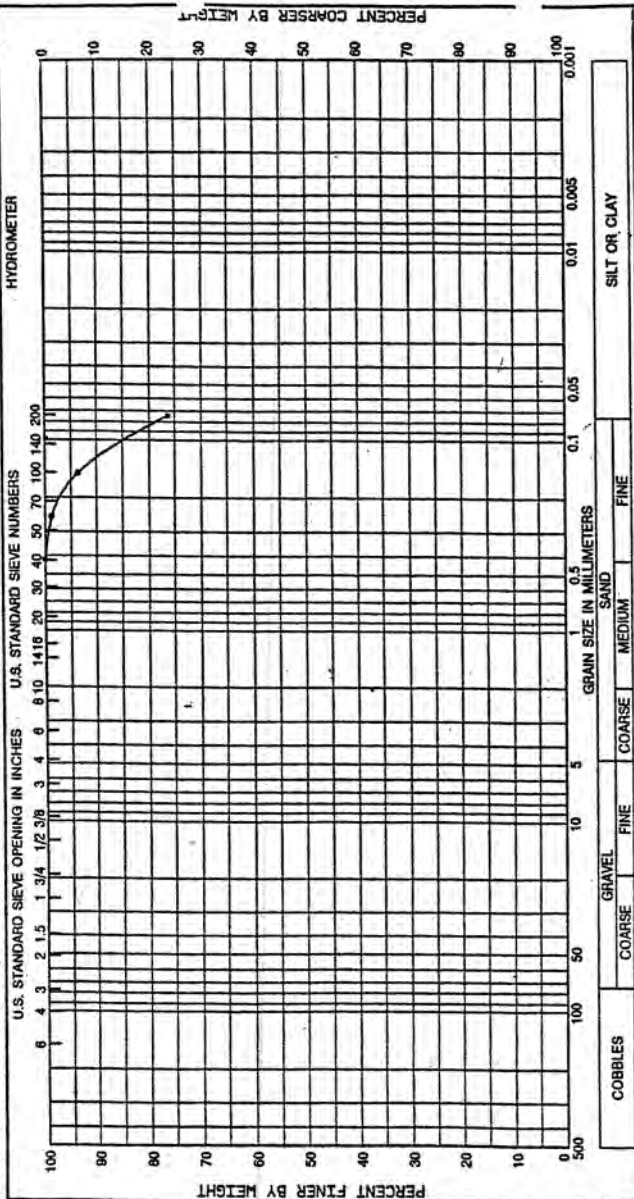


| Sample No.       | COBBLES                  | GRAVEL                                                                                                                                       |      |        | SAND   |      |    | FINE | PI        | Project                                |
|------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------|--------|--------|------|----|------|-----------|----------------------------------------|
|                  |                          | COARSE                                                                                                                                       | FINE | COARSE | MEDIUM | FINE | PL |      |           |                                        |
| 1                | Depth/Elev<br>41.8-43.3' | Classification<br>Gray inorganic silt high LL (MH), clayey with a little sand and with a trace of mica and shell.<br>Specific gravity = 2.79 |      |        |        |      |    |      | 152 79 73 | SAVANNAH HARBOR<br>PRELIMINARY BORINGS |
|                  |                          |                                                                                                                                              |      |        |        |      |    |      |           | Lab No. 97-1363                        |
|                  |                          |                                                                                                                                              |      |        |        |      |    |      |           | Boring No. SH-170                      |
| GRADATION CURVES |                          |                                                                                                                                              |      |        |        |      |    |      |           | Date 02/12/92                          |



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

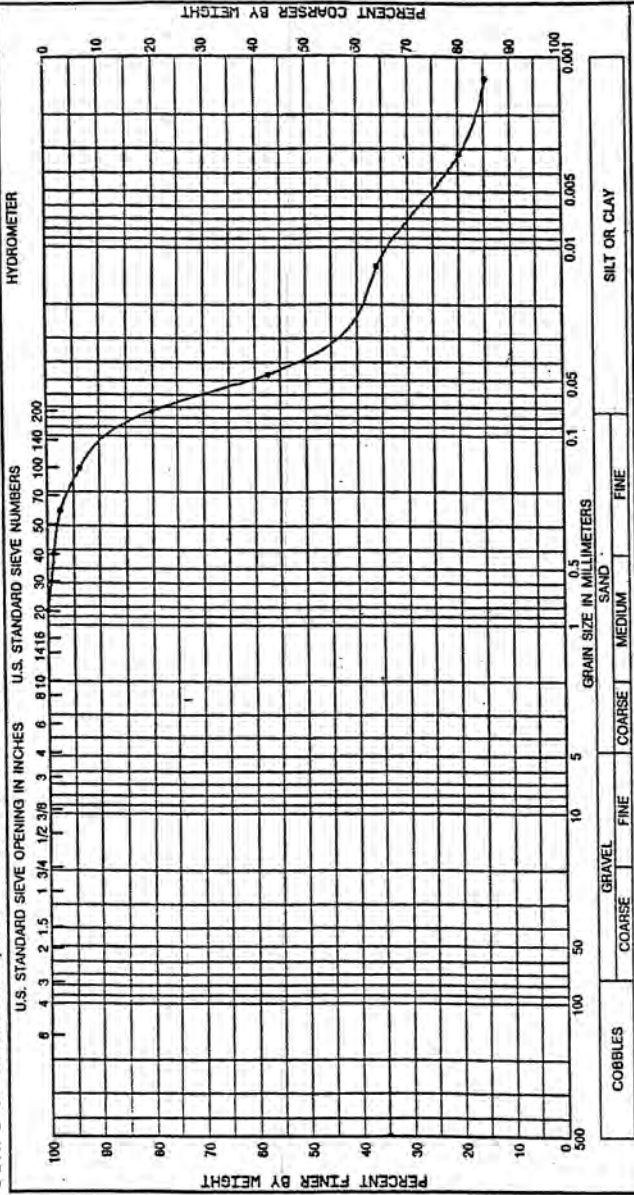
WORK ORDER: 6552  
REQUISITION: EN-66-92-25





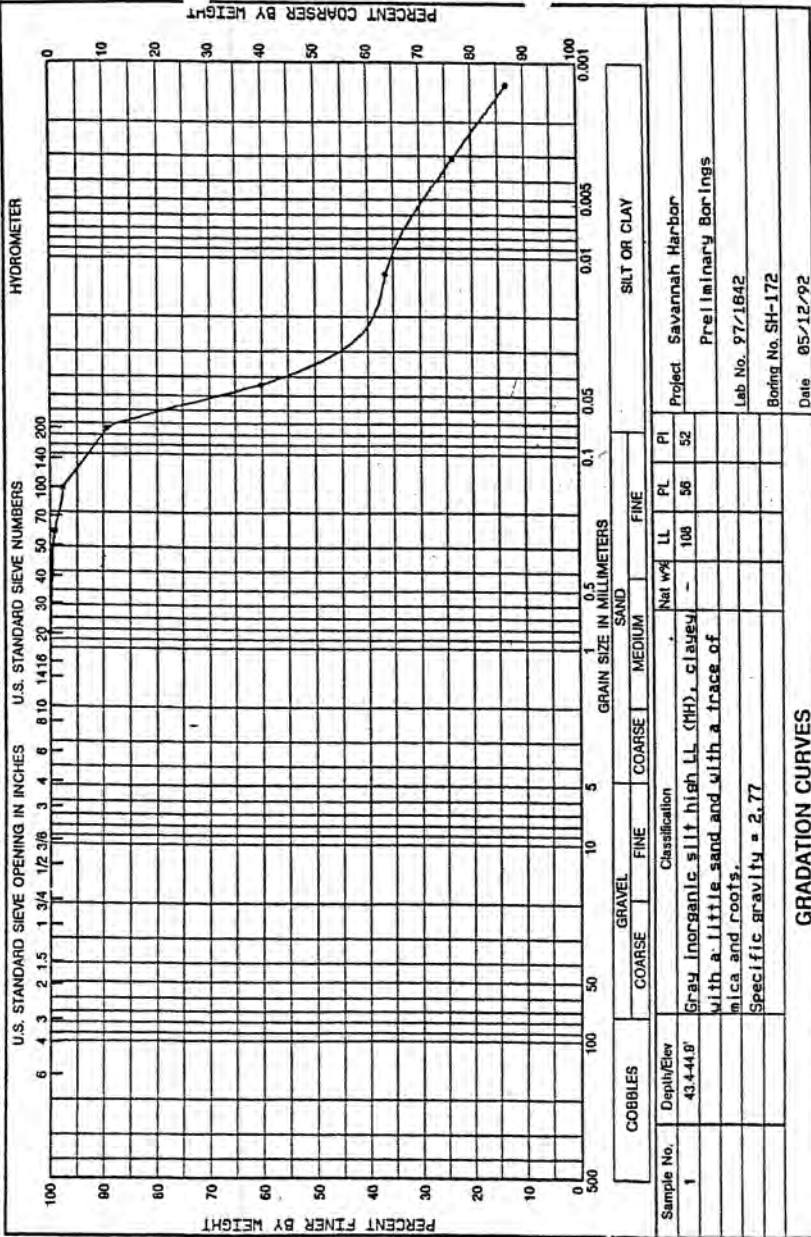
WORK ORDER: 6585  
REQUISITION: EN-GG-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



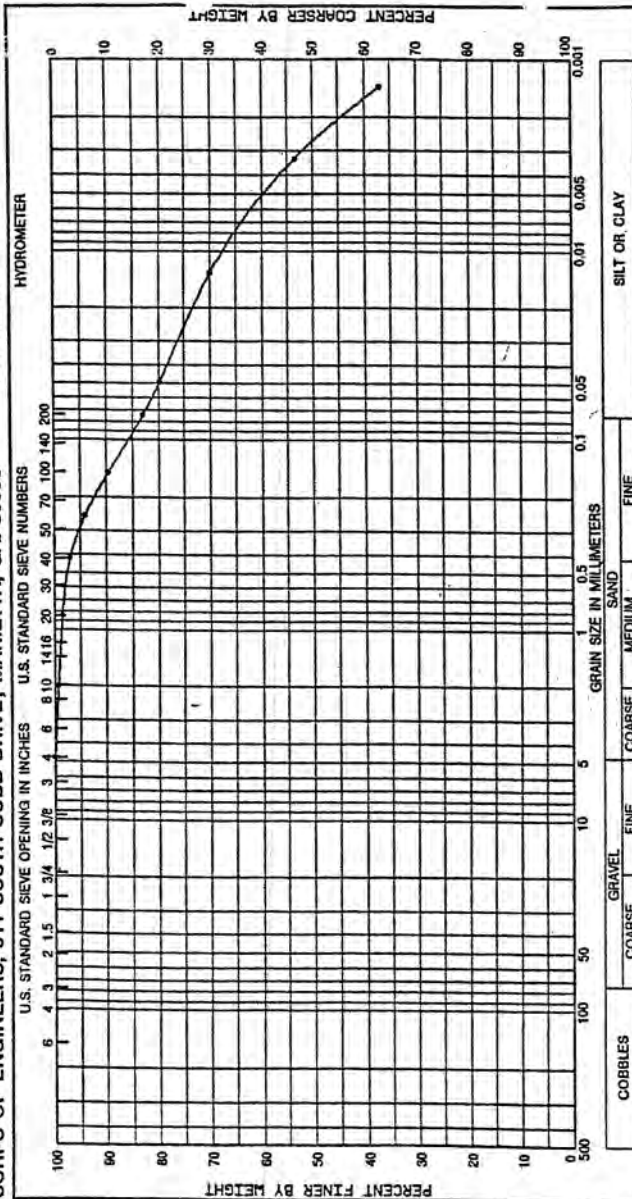
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 8600  
REQUISITION: EN-66-92-53



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 8608  
REQUISITION: EN-66-92-53

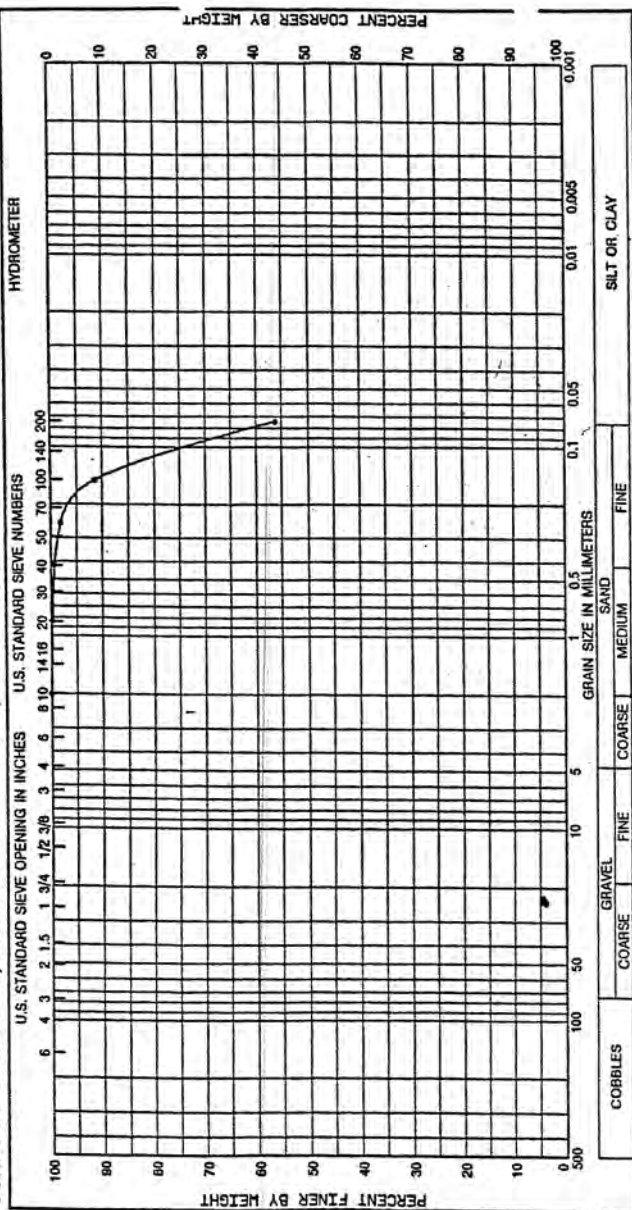


| Sample No.              | Depth/Elev | Classification                                                                                               | Gravel | Fine | Coarse | Medium | Sand | LL  | PL | PI |
|-------------------------|------------|--------------------------------------------------------------------------------------------------------------|--------|------|--------|--------|------|-----|----|----|
| 1                       | 44.475'    | Dk. gray inorganic silt high LL (MH), clayey, slightly organic, with a little sand and with a trace of mica. |        |      |        |        |      | 152 | 57 | 85 |
|                         |            | Specific gravity = 2.62                                                                                      |        |      |        |        |      |     |    |    |
| GRADATION CURVES        |            |                                                                                                              |        |      |        |        |      |     |    |    |
| Project Savannah Harbor |            |                                                                                                              |        |      |        |        |      |     |    |    |
| Preliminary Borings     |            |                                                                                                              |        |      |        |        |      |     |    |    |
| Lab No. 97/1648         |            |                                                                                                              |        |      |        |        |      |     |    |    |
| Boring No. SH-173       |            |                                                                                                              |        |      |        |        |      |     |    |    |
| Date 05/12/92           |            |                                                                                                              |        |      |        |        |      |     |    |    |



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 8600  
REQUISITION: EN-66-92-53



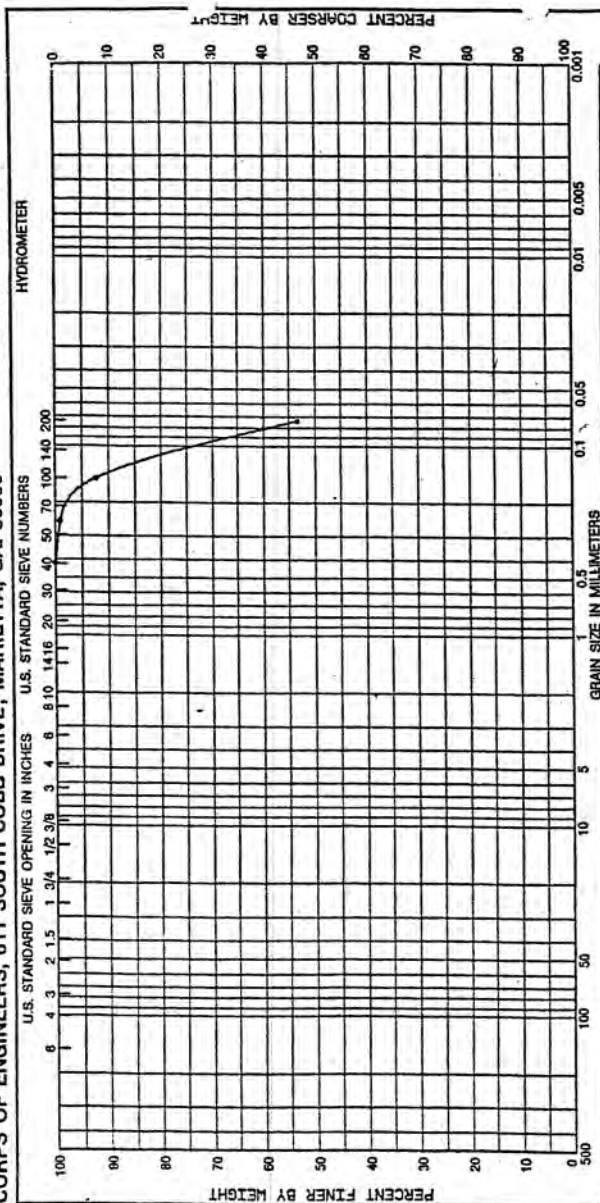
|            |   |            |            |                |                                                             |            |                     |         |                     |
|------------|---|------------|------------|----------------|-------------------------------------------------------------|------------|---------------------|---------|---------------------|
| Sample No. | 2 | Depth/Elev | 43.1-44.6' | Classification | Gray inorganic silt high LL (MH), clayey, micaceous, sandy. | Plasticity | LL 71, PL 35, PI 35 | Project | Savannah Harbor     |
|            |   |            |            |                | Specific gravity = 2.75                                     |            |                     |         | Preliminary Borings |
|            |   |            |            |                |                                                             |            |                     |         | Lab No. 97-1651     |
|            |   |            |            |                |                                                             |            |                     |         | Boring No. SH-174   |
|            |   |            |            |                |                                                             |            |                     |         | Date 05/12/92       |





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-GG-92-25



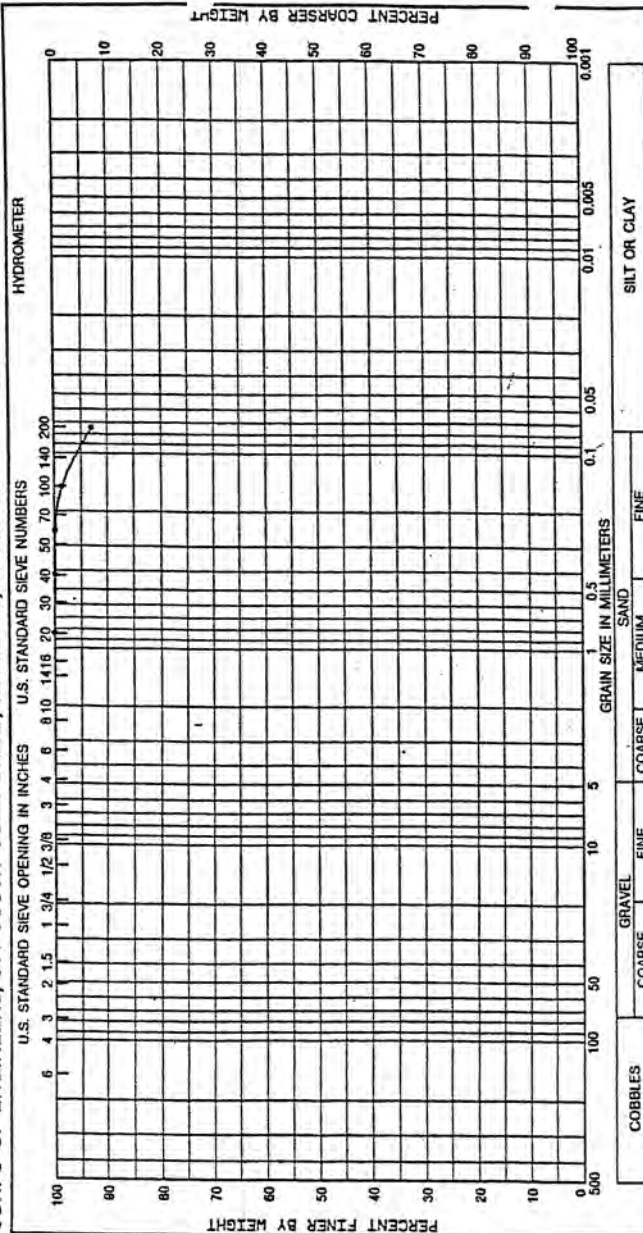
## GRADATION CURVES





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6600  
REQUISITION: EN-GS-92-53



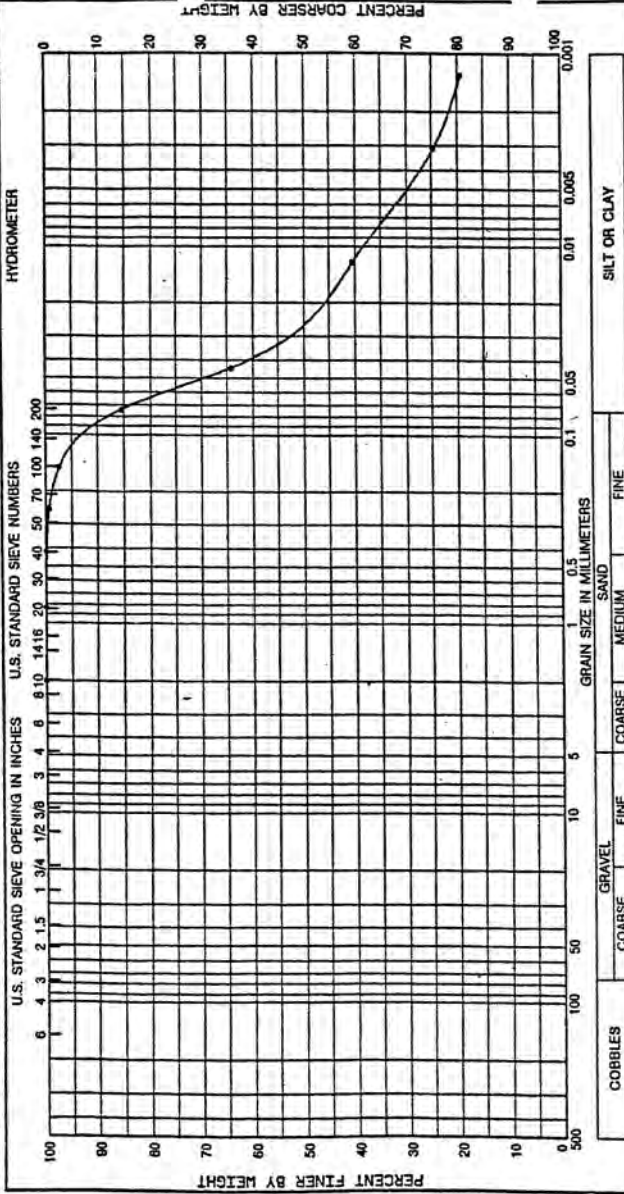
| Sample No. | Depth/Elev | GRAVEL |        |      |                                                                                                   | SAND   |        |      |                | FINE |    |    |                | SILT OR CLAY |        |      |                                             |
|------------|------------|--------|--------|------|---------------------------------------------------------------------------------------------------|--------|--------|------|----------------|------|----|----|----------------|--------------|--------|------|---------------------------------------------|
|            |            | COARSE | COARSE | FINE | Classification                                                                                    | COARSE | MEDIUM | FINE | Classification | LL   | PL | PI | Classification | COARSE       | MEDIUM | FINE | Classification                              |
| 1          | 44.2-45.7  |        |        |      | Gray inorganic silt high LL (NH), clayey micaceous, with a trace of sand, Specific gravity = 2.74 |        |        |      |                | 128  | 73 | 55 |                |              |        |      | Project Savannah Harbor Preliminary Borings |
|            |            |        |        |      |                                                                                                   |        |        |      |                |      |    |    |                |              |        |      | Lab No. 97/1658                             |
|            |            |        |        |      |                                                                                                   |        |        |      |                |      |    |    |                |              |        |      | Boring No. SH-176                           |
|            |            |        |        |      |                                                                                                   |        |        |      |                |      |    |    |                |              |        |      | Date 05/12/92                               |

GRADATION CURVES



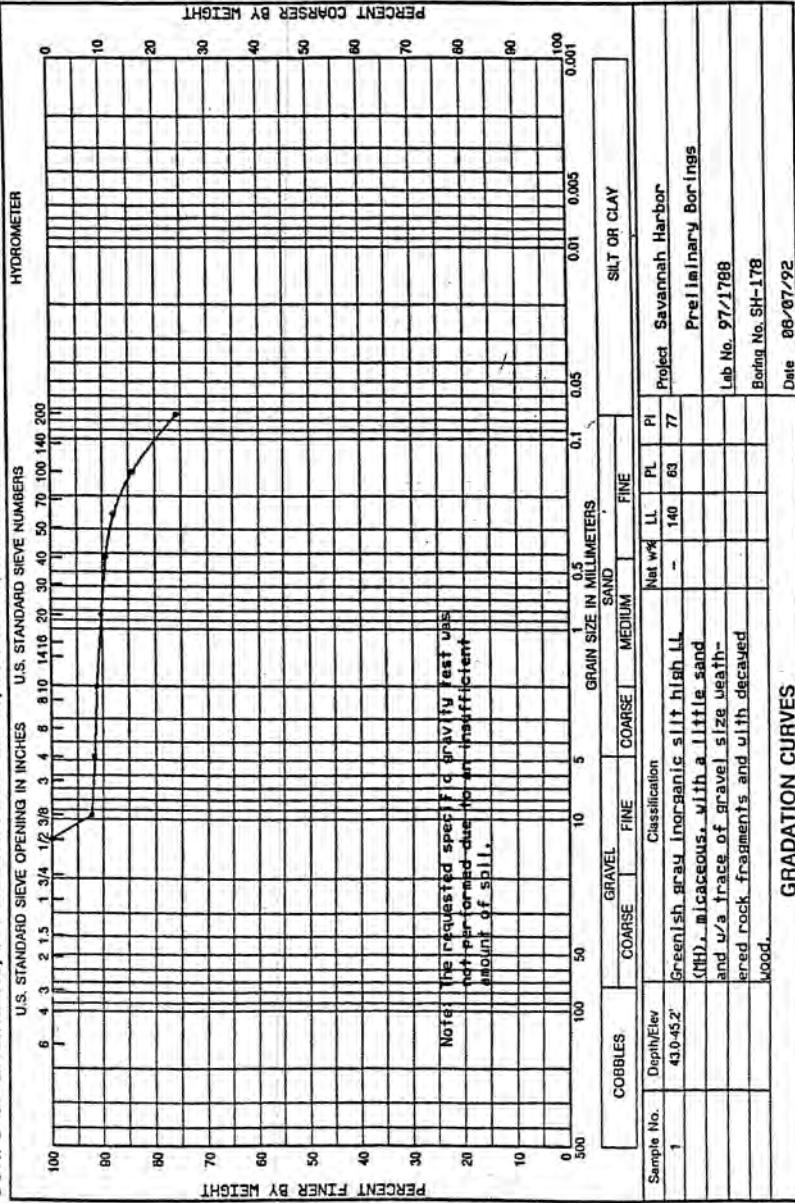
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6588  
REQUISITION: EN-65-92-53



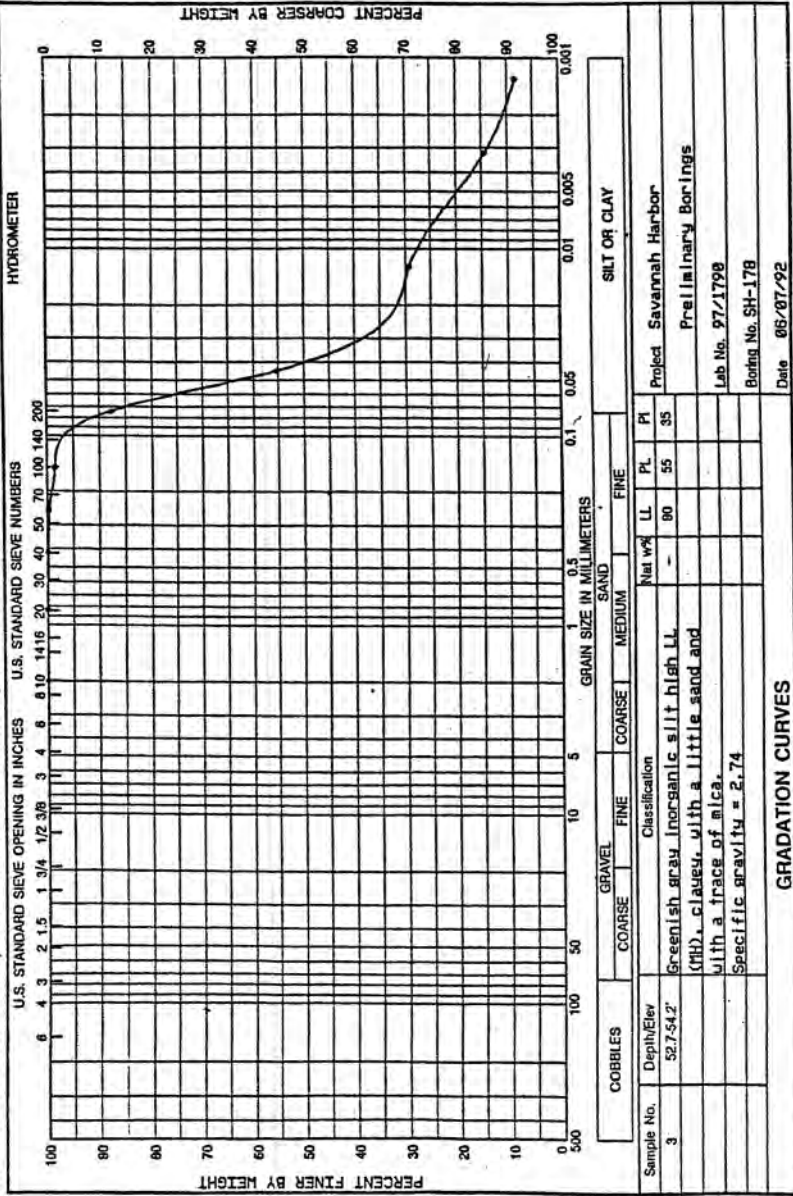
WORK ORDER: 6661  
 REQUISITION: EN-GG-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



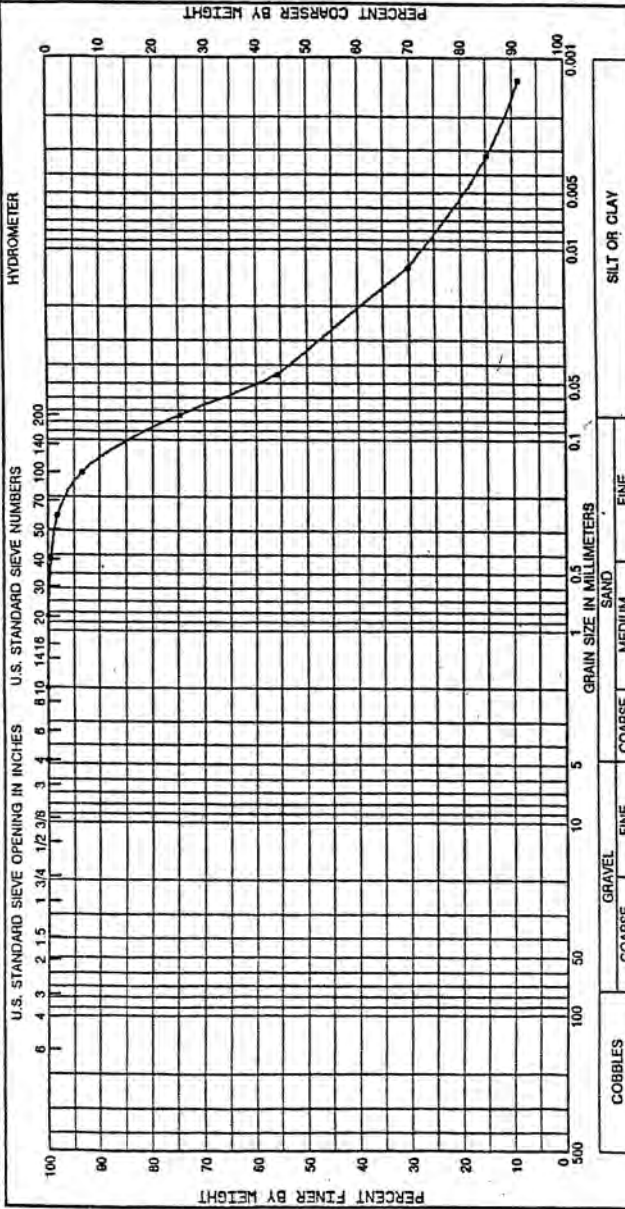
**WORK ORDER: 6601**  
**REQUISITION: EN-GG-92-54**

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



WORK ORDER: 6581  
 REQUISITION: EN-GS-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



|            |   |            |            |                |                                                                                                                                |    |    |    |    |            |                     |
|------------|---|------------|------------|----------------|--------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|------------|---------------------|
| Sample No. | 2 | Depth/Elev | 45.4-46.9' | Classification | Greenish gray inorganic silt high LL (MH), with some sand and with a trace of mica and organic matter, Specific gravity = 2.73 | PL | 38 | PI | 38 | Project    | Savannah Harbor     |
|            |   |            |            |                |                                                                                                                                | LL | 94 |    |    |            | Preliminary Borings |
|            |   |            |            |                |                                                                                                                                |    |    |    |    | Lab No.    | 97/1793             |
|            |   |            |            |                |                                                                                                                                |    |    |    |    | Boring No. | SH-179              |
|            |   |            |            |                |                                                                                                                                |    |    |    |    | Date       | 08/87/92            |

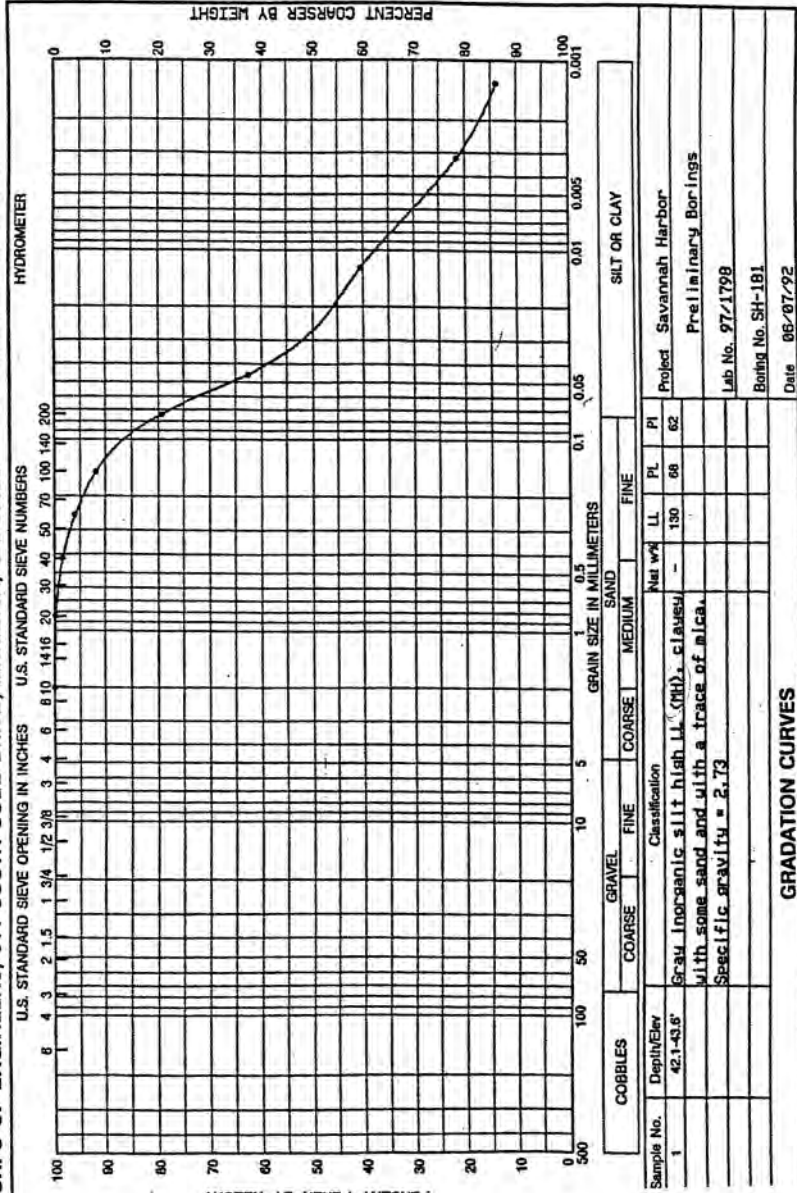
GRADATION CURVES





WORK ORDER: 6881  
 REQUESTION: EN-66-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



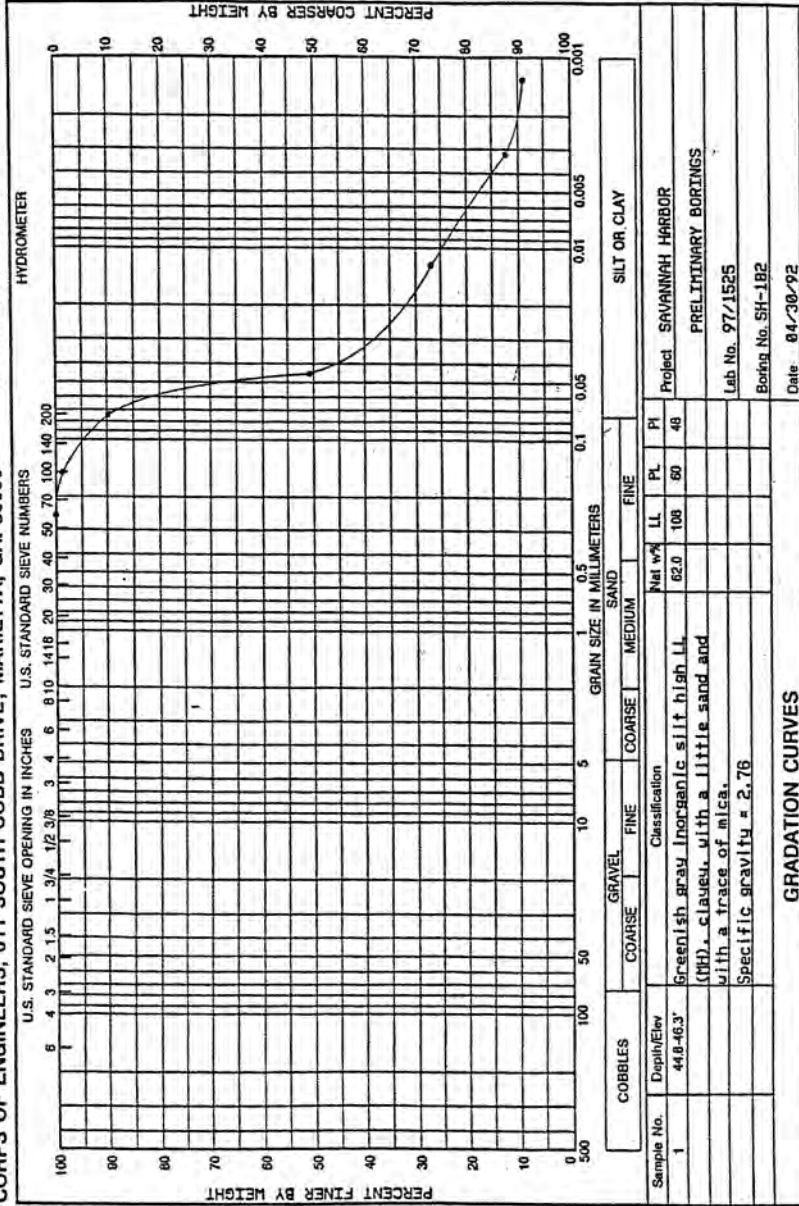
GRADATION CURVES

| Sample No.       | Depth/Elev | Classification                                                                                             | Nat wt | LL  | PL | PI | Project             |
|------------------|------------|------------------------------------------------------------------------------------------------------------|--------|-----|----|----|---------------------|
| 1                | 42.1-43.6' | Gray, inorganic silt high LL (MH), clayey with some sand and with a trace of mica. Specific gravity = 2.73 | -      | 130 | 68 | 62 | Savannah Harbor     |
|                  |            |                                                                                                            |        |     |    |    | Preliminary Borings |
|                  |            |                                                                                                            |        |     |    |    | Lab No. 97-1798     |
|                  |            |                                                                                                            |        |     |    |    | Boring No. SH-181   |
|                  |            |                                                                                                            |        |     |    |    | Date 06-07-92       |
| GRADATION CURVES |            |                                                                                                            |        |     |    |    |                     |



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

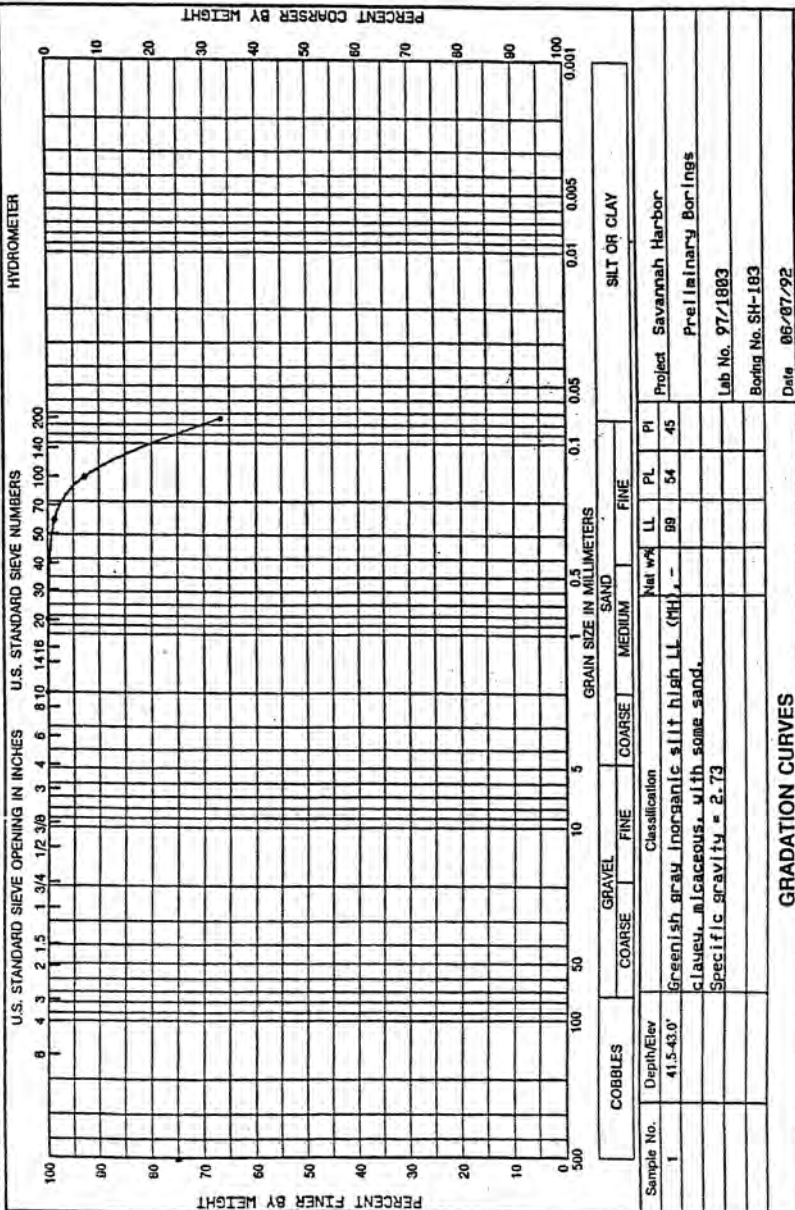
WORK ORDER: 6585  
 REQUISITION: EN-66-92-37





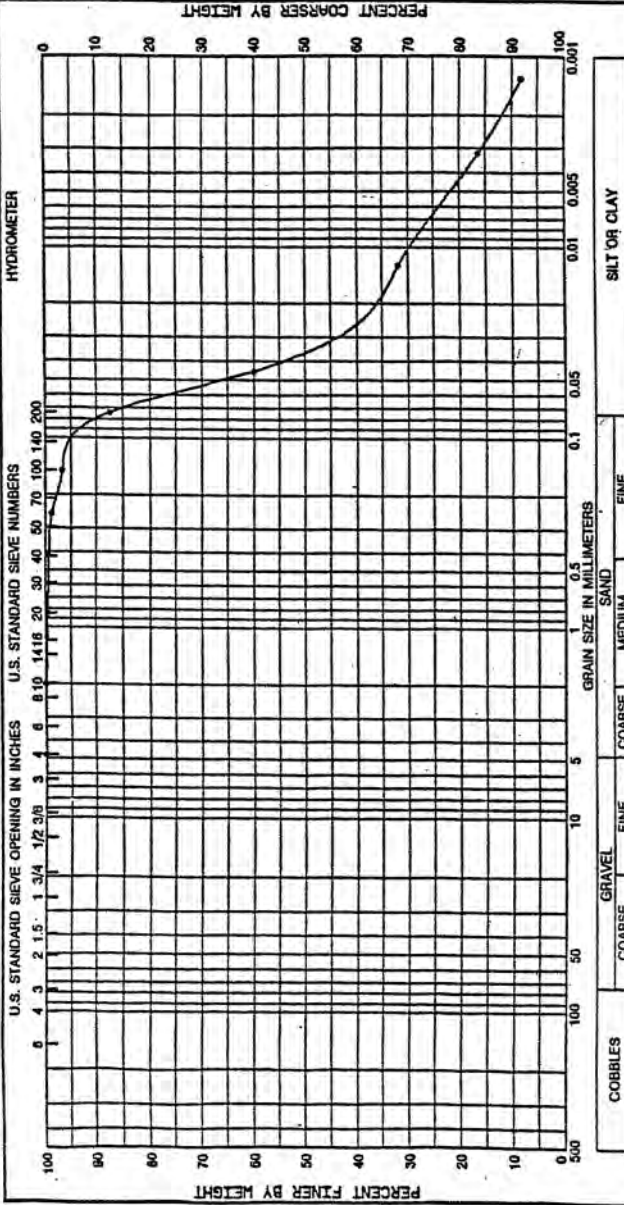
WORK ORDER: 8681  
REQUESTION: EN-GS-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



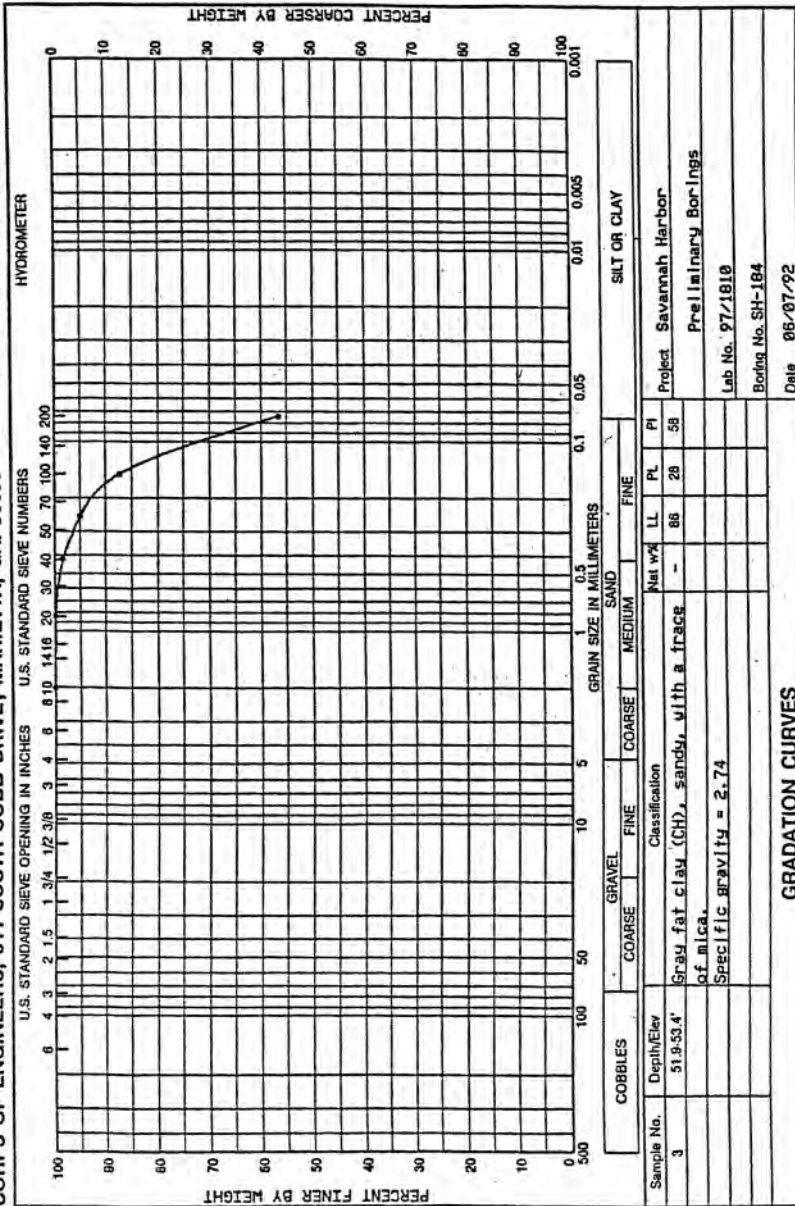
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 8681  
REQUISITION: EN-66-92-54



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

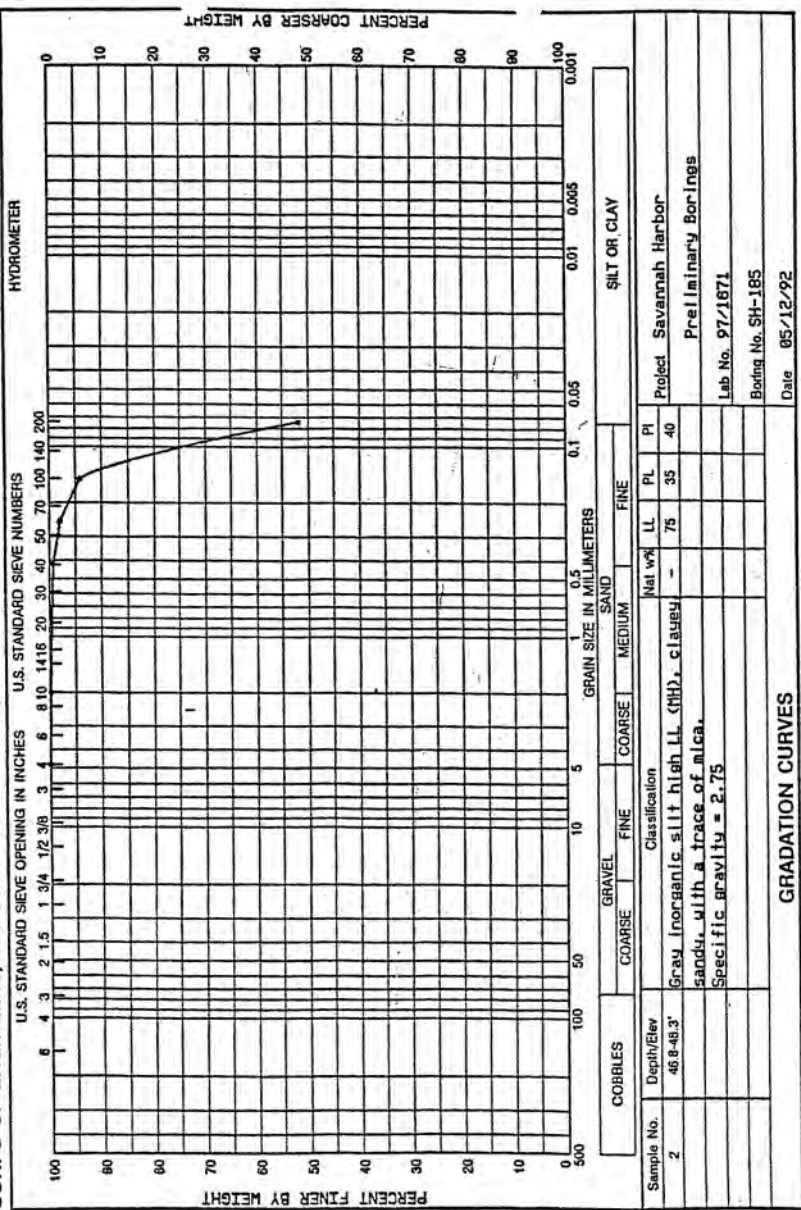
WORK ORDER: 6881  
REQUISITION: EN-GG-92-54



GRADATION CURVES

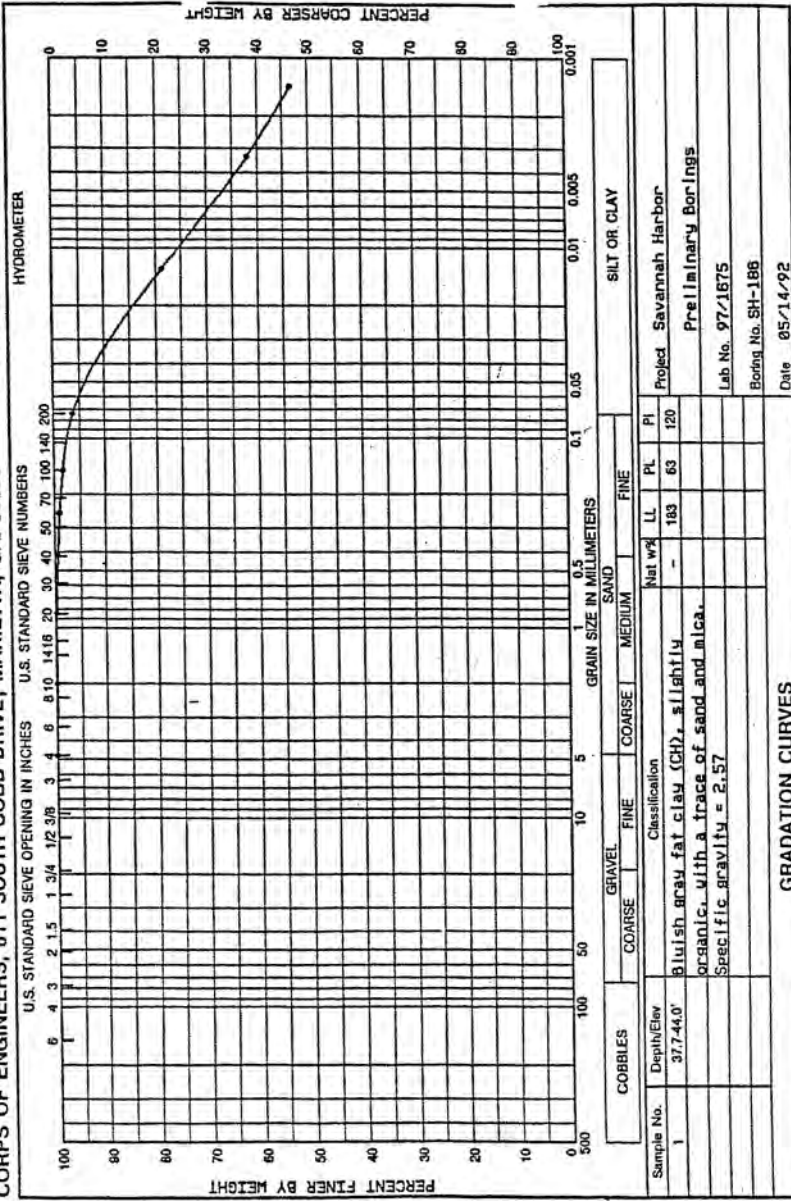
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6680  
 REQUISITION: EN-66-92-53



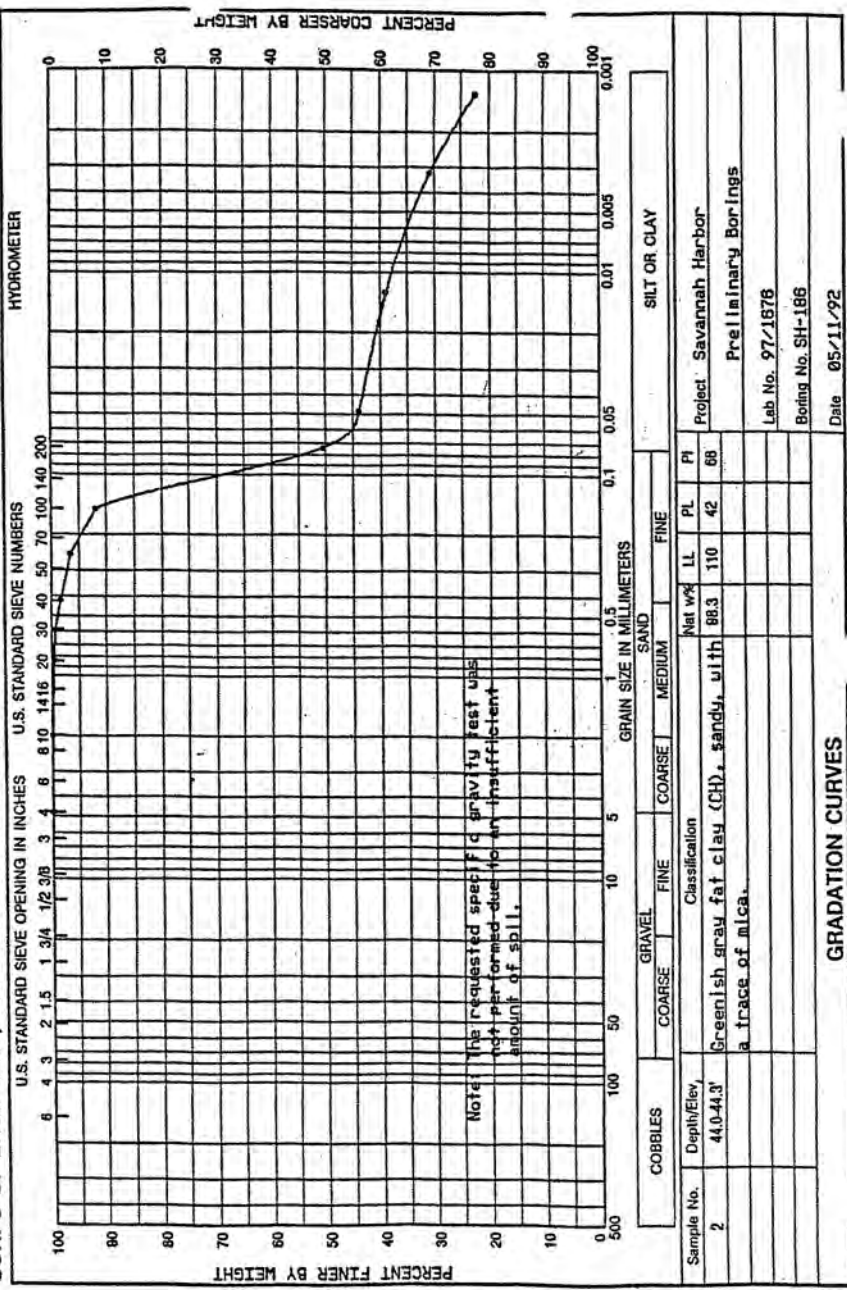
WORK ORDER: 6600  
 REGISTRATION: EN-GG-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6560  
REQUISITION: EN-GG-92-53

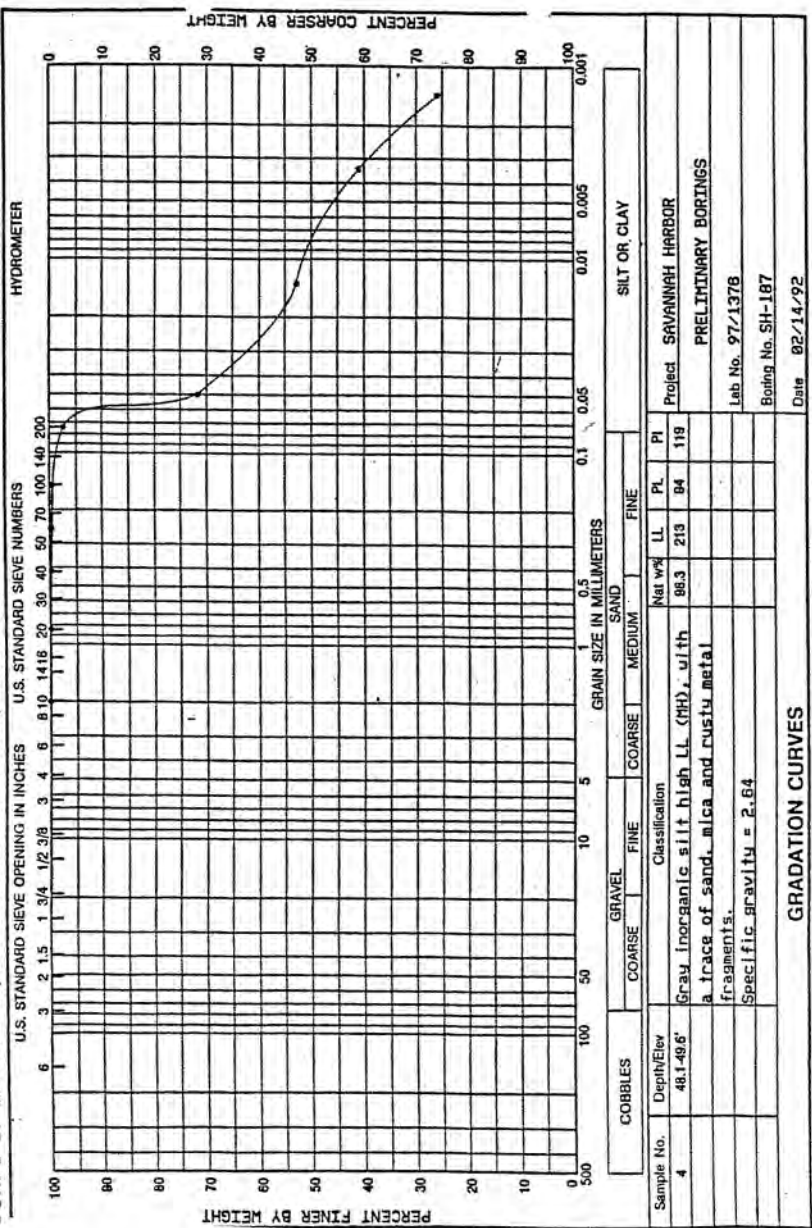






WORK ORDER: 6553  
REQUISITION: EN-66-92-25

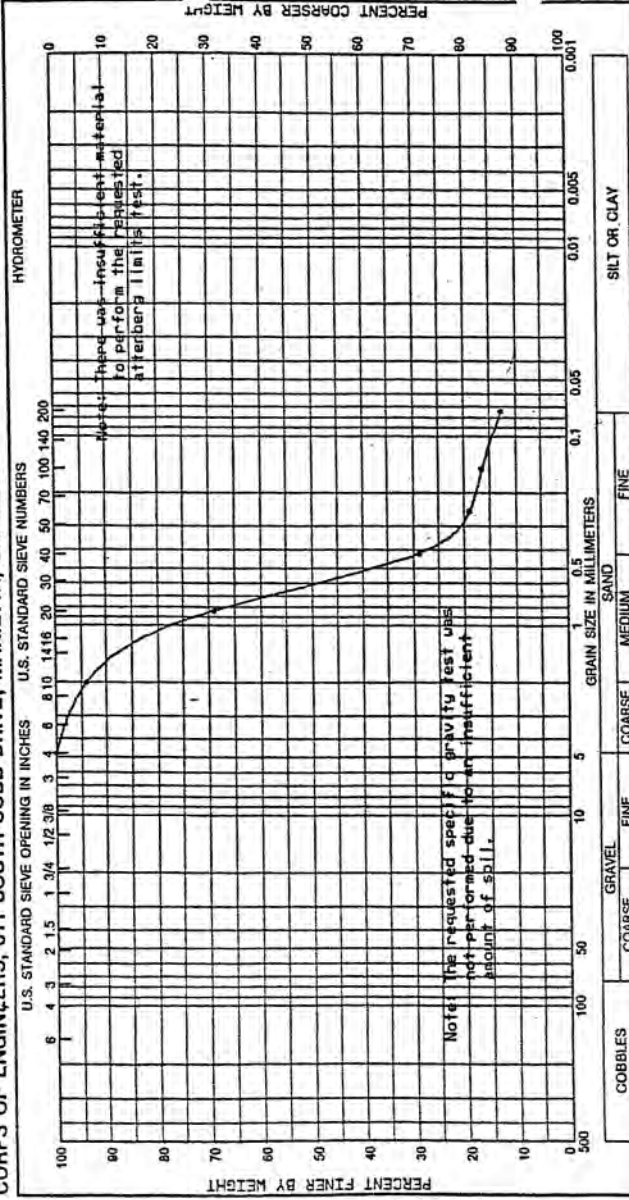
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





WORK ORDER: 6800  
REQUISITION: EN-GG-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



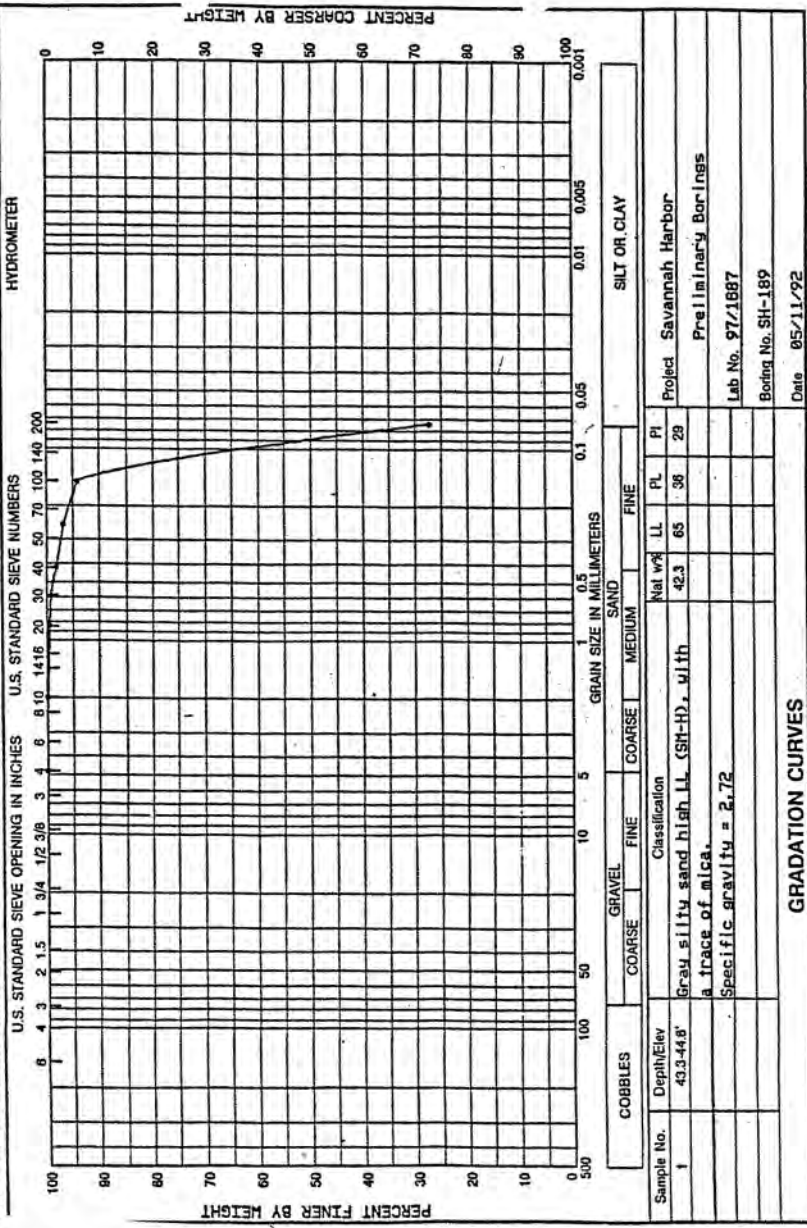
| Sample No. | Depth/Elev | Visual Classification                                           | GRAVEL |      |        |      | SAND   |        |      |        | SILT OR CLAY |    |    |  |
|------------|------------|-----------------------------------------------------------------|--------|------|--------|------|--------|--------|------|--------|--------------|----|----|--|
|            |            |                                                                 | COARSE | FINE | COARSE | FINE | COARSE | MEDIUM | FINE | Net wt | LL           | PL | PI |  |
| 1          | 41.0-42.2' | Gray silty sand (STD), with a trace of mica and organic matter. |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |
|            |            |                                                                 |        |      |        |      |        |        |      |        |              |    |    |  |

GRADATION CURVES



WORK ORDER: 6600  
REQUISITION: EN-GG-92-53

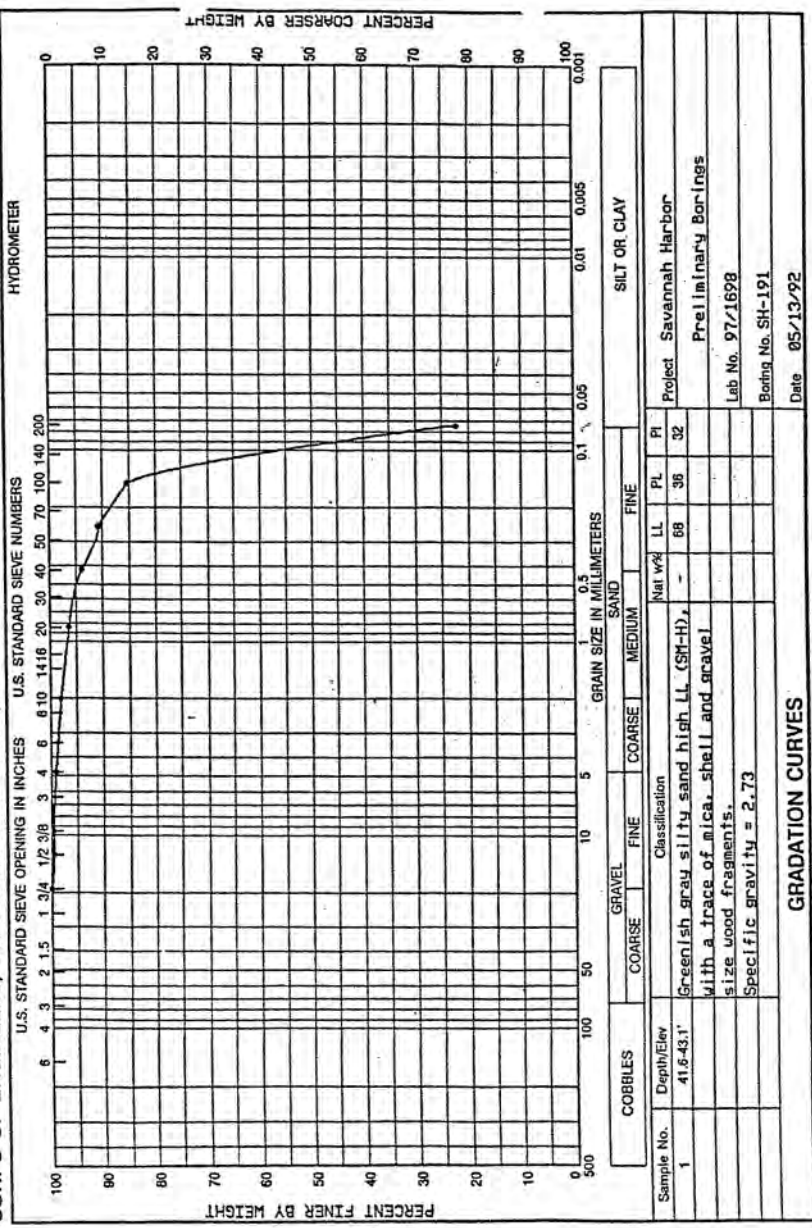
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





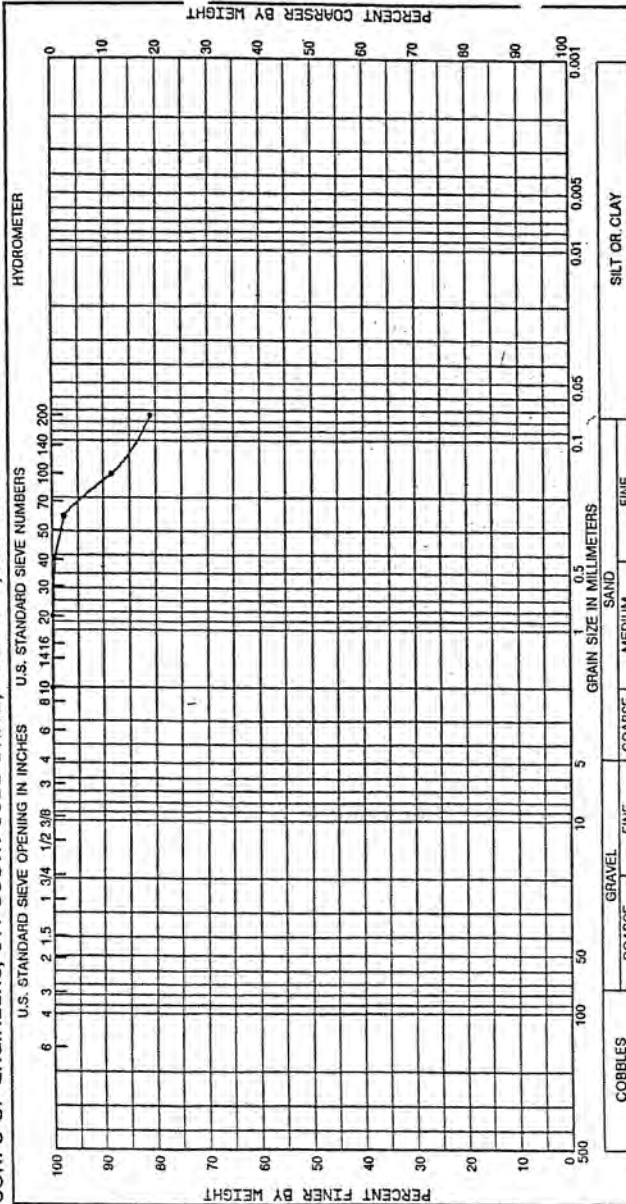
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6600  
 REQUISITION: EN-66-92-53



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6600  
REQUISITION: EN-66-92-53

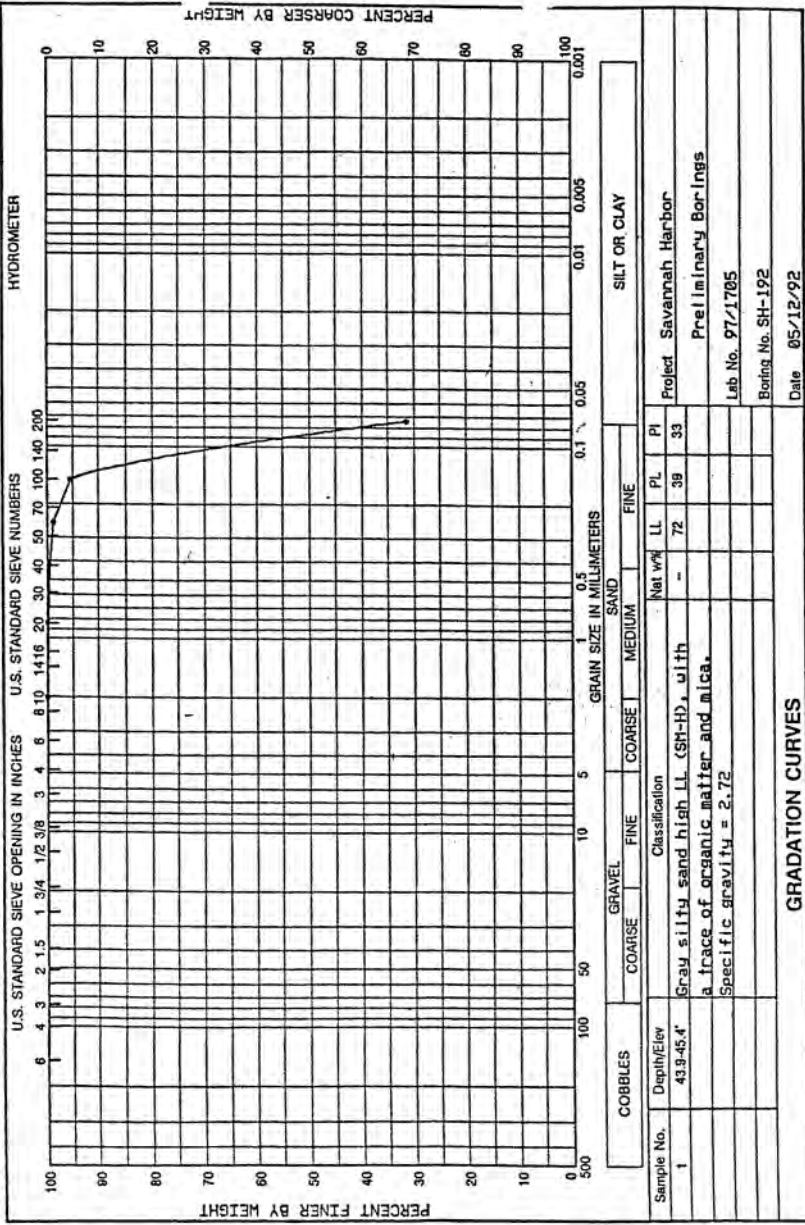


|                         |   |            |            |                |                                                                                                 |           |       |     |    |     |    |
|-------------------------|---|------------|------------|----------------|-------------------------------------------------------------------------------------------------|-----------|-------|-----|----|-----|----|
| Sample No.              | 3 | Depth/Elev | 47.6-49.1' | Classification | Greenish gray inorganic silt high LL (MH), clayey, with a little sand and with a trace of mica. | Nat w% LL | 128.7 | 202 | 22 | 120 | PI |
|                         |   |            |            |                | Specific gravity = 2.84                                                                         |           |       |     |    |     |    |
| GRADATION CURVES        |   |            |            |                |                                                                                                 |           |       |     |    |     |    |
| Project Savannah Harbor |   |            |            |                |                                                                                                 |           |       |     |    |     |    |
| Preliminary Borings     |   |            |            |                |                                                                                                 |           |       |     |    |     |    |
| Lab No. 97/1708         |   |            |            |                |                                                                                                 |           |       |     |    |     |    |
| Boring No. SH-191       |   |            |            |                |                                                                                                 |           |       |     |    |     |    |
| Date 05/11/92           |   |            |            |                |                                                                                                 |           |       |     |    |     |    |



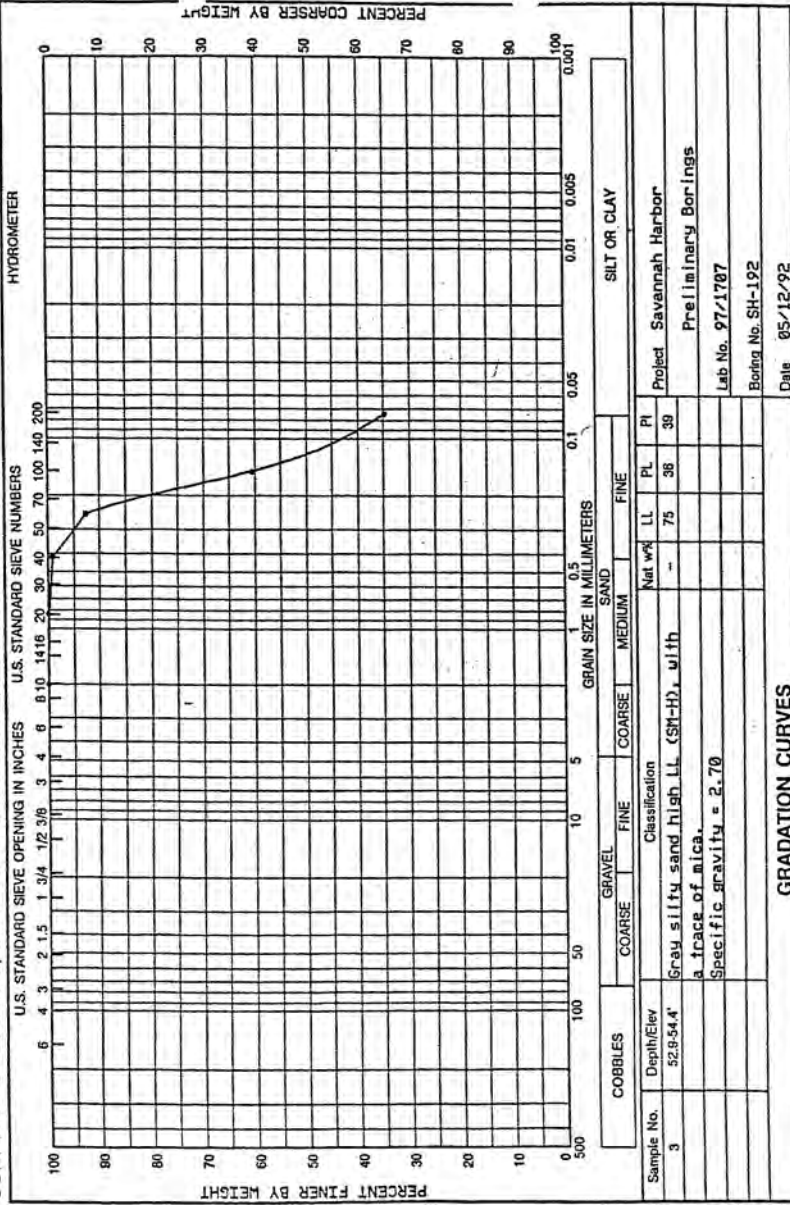
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6600  
REQUISITION: EN-55-92-53



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

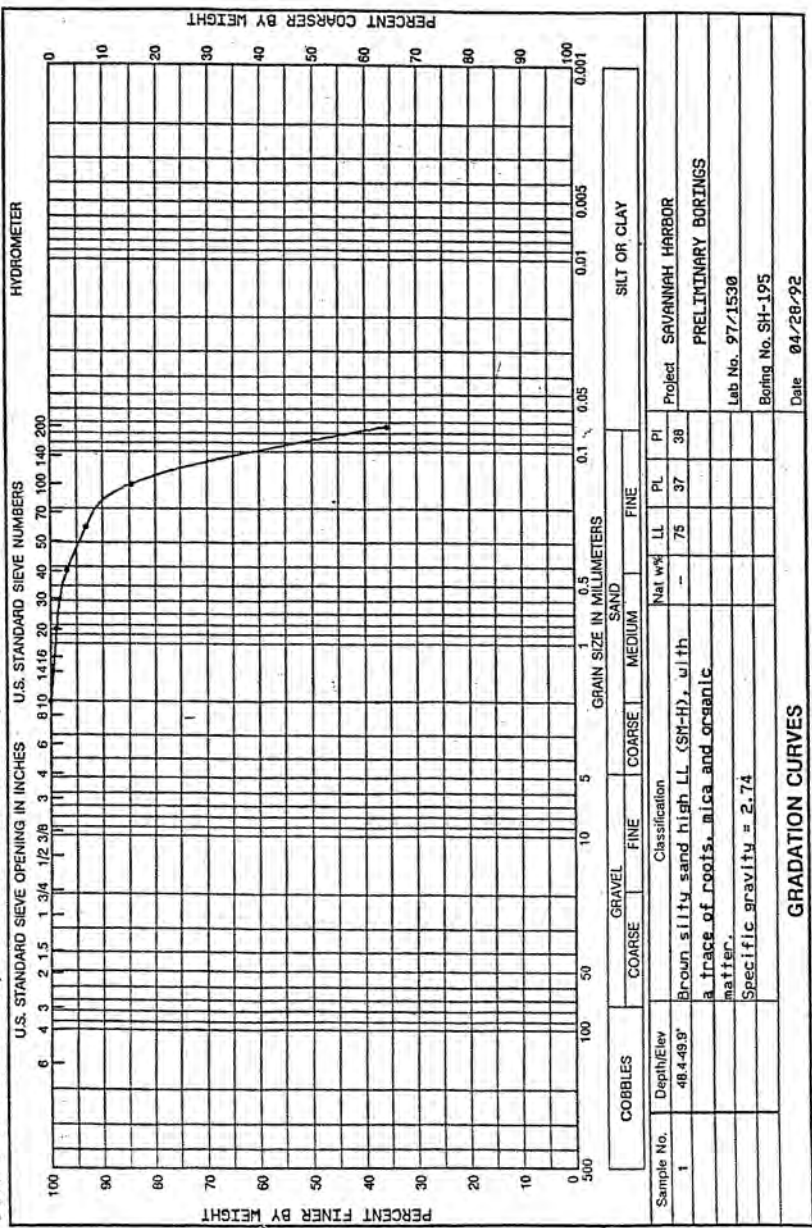
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REQUISITION: EN-GG-92-53





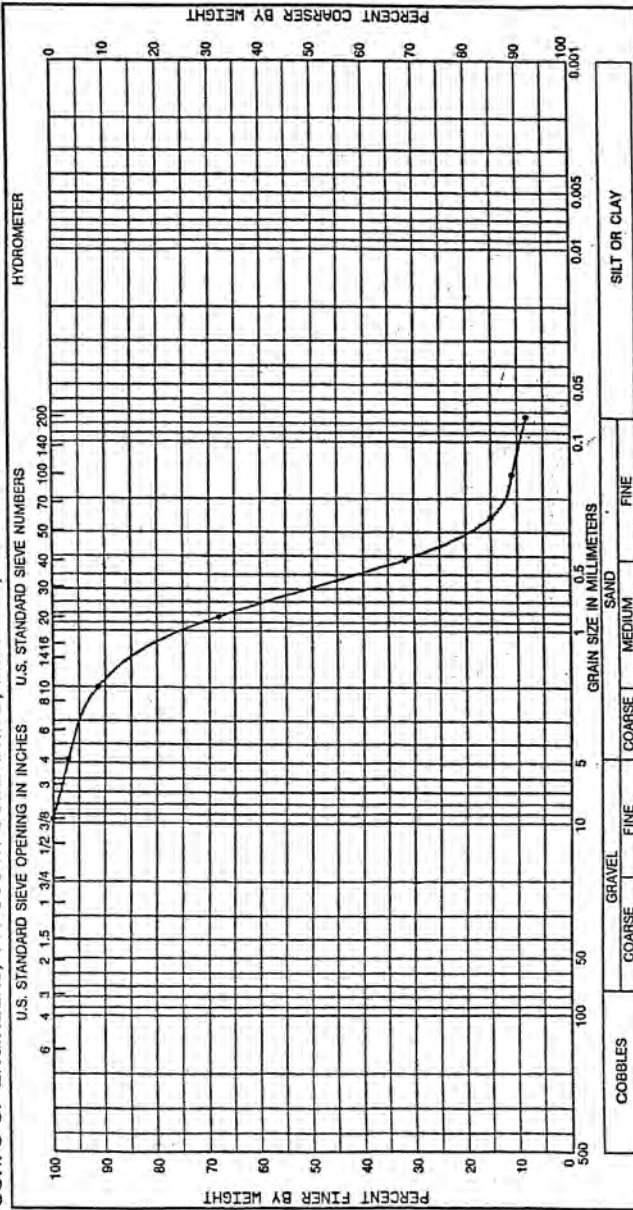
WORK ORDER: 6585  
REQUISITION: EN-65-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6601  
REQUISITION: EN-GG-92-54

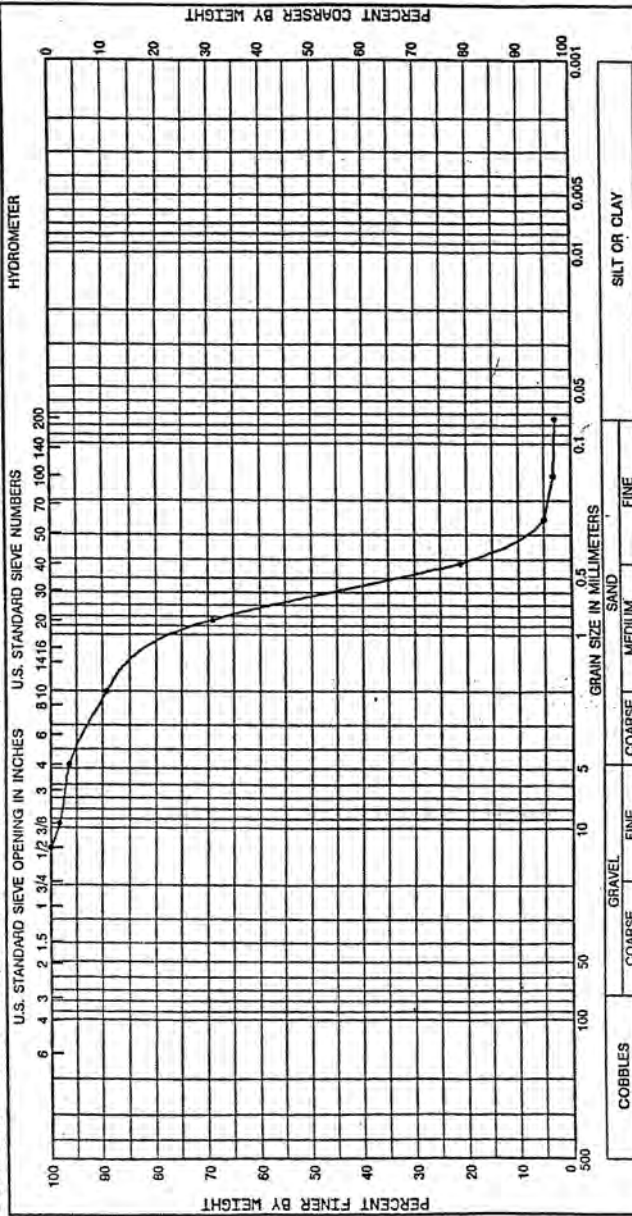


| COBBLES                 |            | GRAVEL                                                                                                                                         |        | FINE SAND |        | MEDIUM SAND |        | FINE SAND |        | SILT OR CLAY |        |
|-------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|--------|-------------|--------|-----------|--------|--------------|--------|
| Sample No.              | Depth/Elev | Classification                                                                                                                                 | Coarse | Fine      | Coarse | Fine        | Coarse | Fine      | Coarse | Fine         | Coarse |
| 1                       | 39.0-42.0' | Dk. gray poorly graded silty, clayey sand (SP-SM-SC), with a trace of gravel size weathered rock fragments and with a trace of mica and roots. |        |           |        |             |        |           |        |              |        |
|                         |            | Specific gravity = 2.68                                                                                                                        |        |           |        |             |        |           |        |              |        |
| GRADATION CURVES        |            |                                                                                                                                                |        |           |        |             |        |           |        |              |        |
| Project Savannah Harbor |            |                                                                                                                                                |        |           |        |             |        |           |        |              |        |
| Preliminary Borings     |            |                                                                                                                                                |        |           |        |             |        |           |        |              |        |
| Lab No. 97/1814         |            |                                                                                                                                                |        |           |        |             |        |           |        |              |        |
| Boring No. SH-197       |            |                                                                                                                                                |        |           |        |             |        |           |        |              |        |
| Date 06/07/92           |            |                                                                                                                                                |        |           |        |             |        |           |        |              |        |



WORK ORDER: 6601  
REQUISITION: EN-66-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

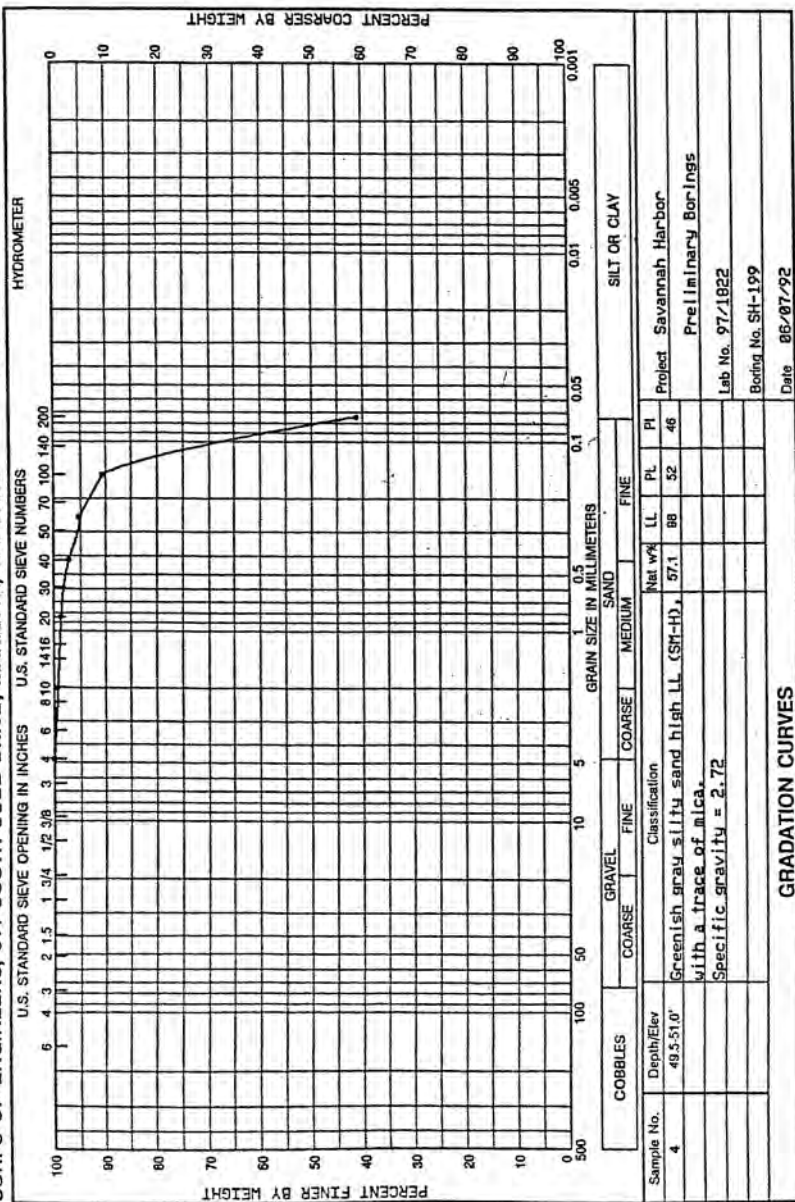


|            |            |                                                                                                                            |  |         |    |              |    |
|------------|------------|----------------------------------------------------------------------------------------------------------------------------|--|---------|----|--------------|----|
| COBBLES    |            | GRAVEL                                                                                                                     |  | SAND    |    | SILT OR CLAY |    |
| COARSE     |            | FINE                                                                                                                       |  | COARSE  |    | FINE         |    |
| Sample No. | Depth/Elev | Classification                                                                                                             |  | Net wt% | LL | PL           | PI |
| 2          | 43.5-45.0' | Tannish gray poorly graded sand (SP) with a trace of gravel size weathered rock fragments and with decayed wood fragments. |  | -       | NP | NP           | NP |
|            |            | Specific gravity = 2.67                                                                                                    |  |         |    |              |    |
|            |            | GRADATION CURVES                                                                                                           |  |         |    |              |    |
|            |            | Project Savannah Harbor                                                                                                    |  |         |    |              |    |
|            |            | Preliminary Borings                                                                                                        |  |         |    |              |    |
|            |            | Lab No. 97/1820                                                                                                            |  |         |    |              |    |
|            |            | Boring No. SH-199                                                                                                          |  |         |    |              |    |
|            |            | Date 05/07/92                                                                                                              |  |         |    |              |    |



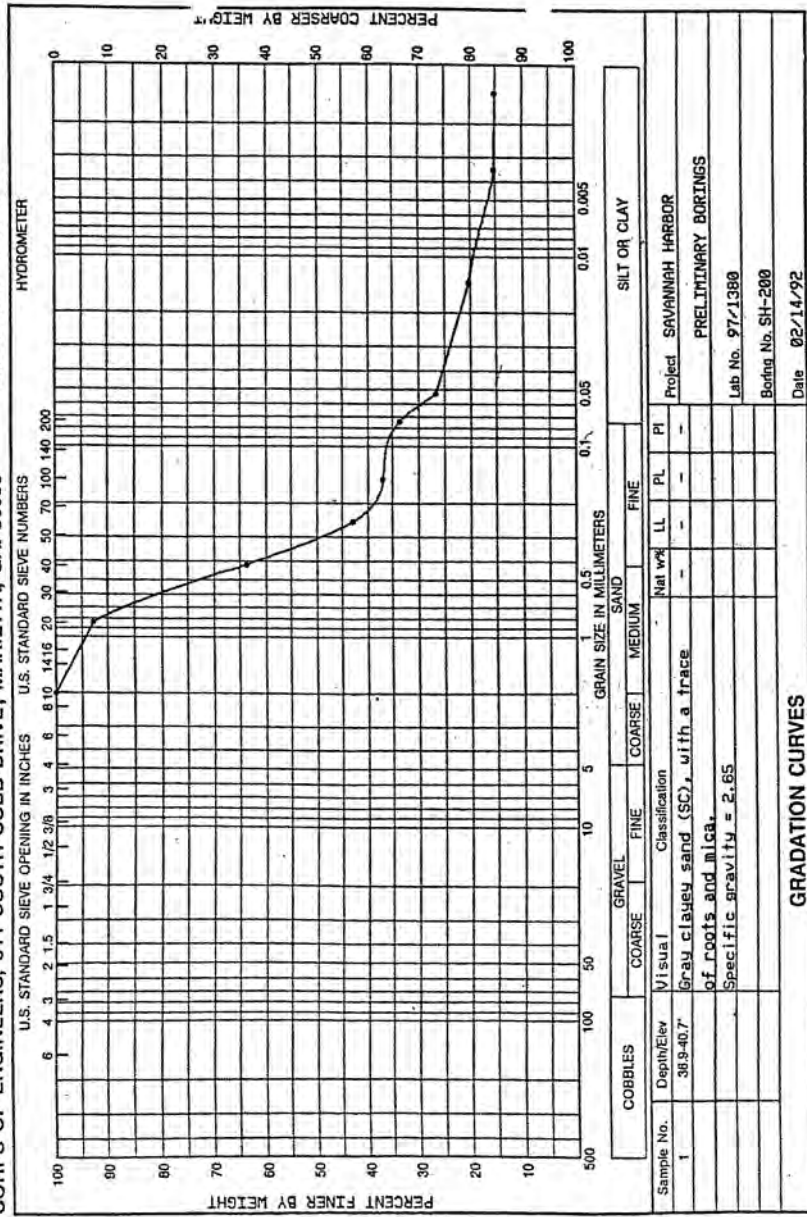
WORK ORDER: 6601  
REQUISITION: EN-GG-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



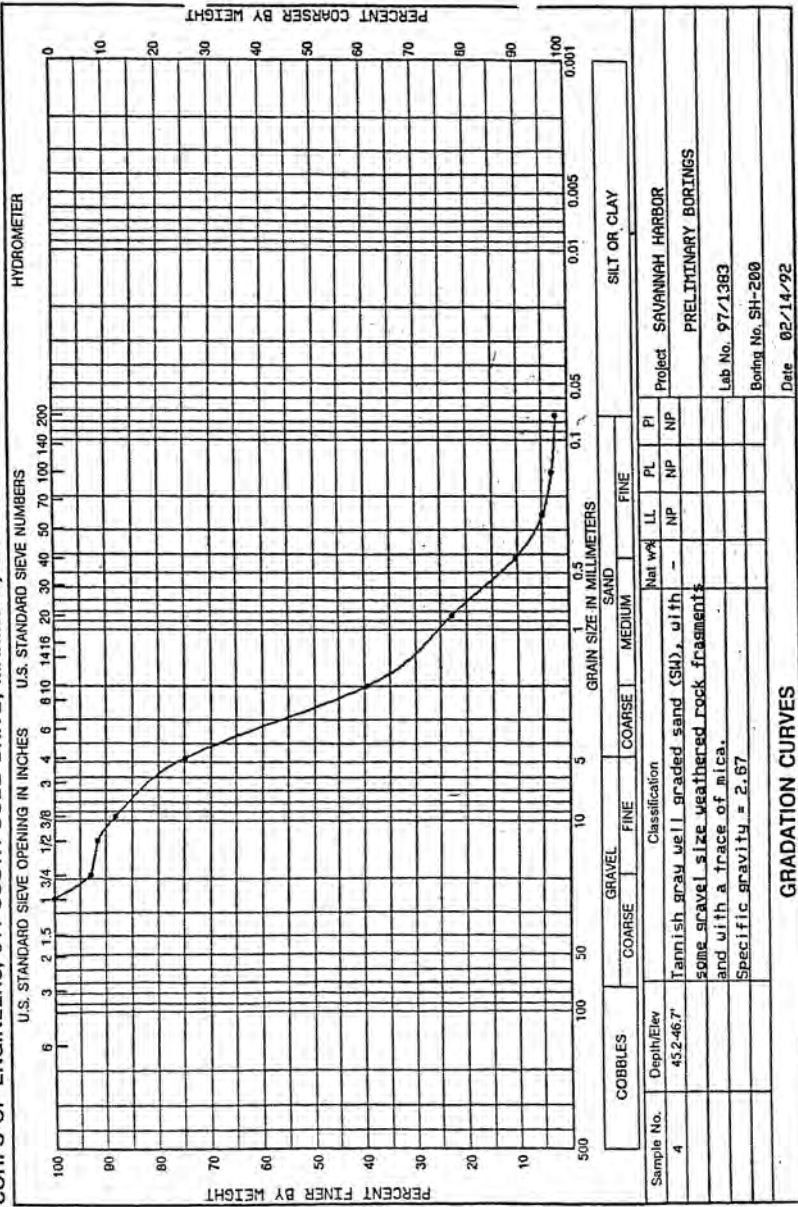
WORK ORDER: 6552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



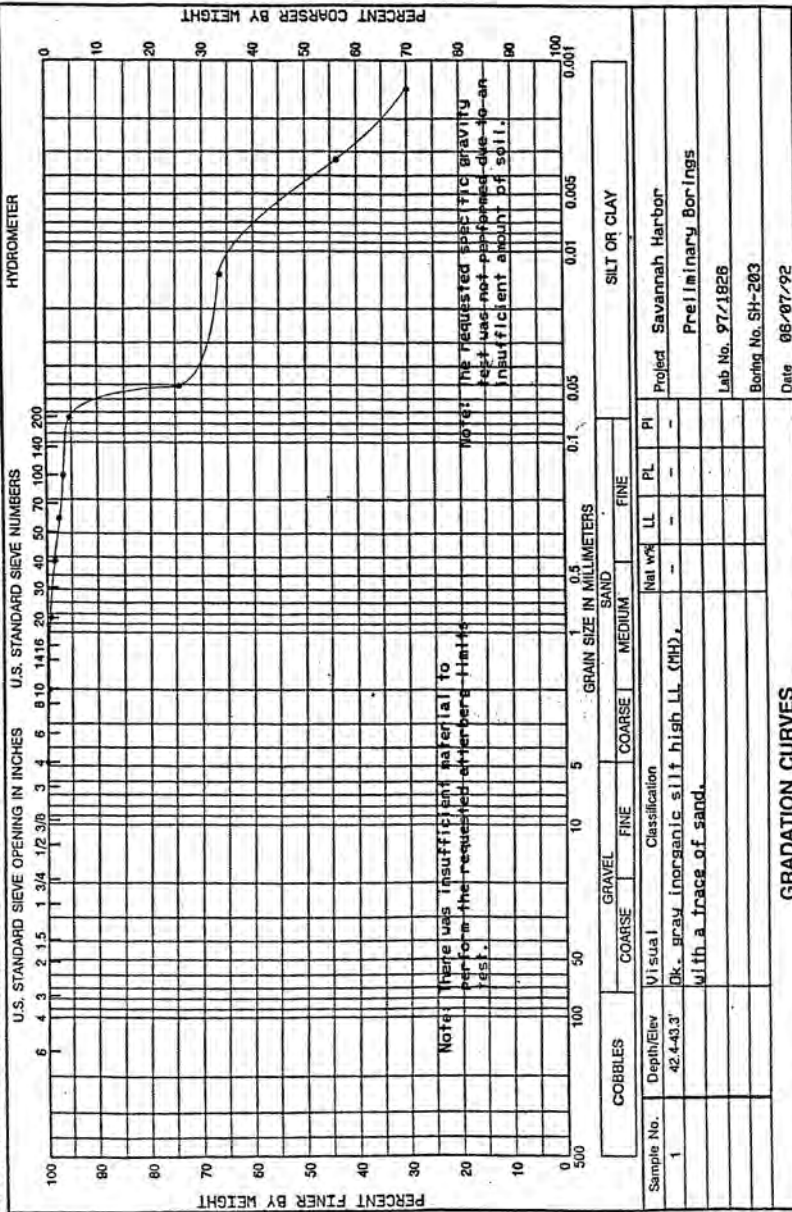
WORK ORDER: 8552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



WORK ORDER: 6861  
REQUISITION: EN-66-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

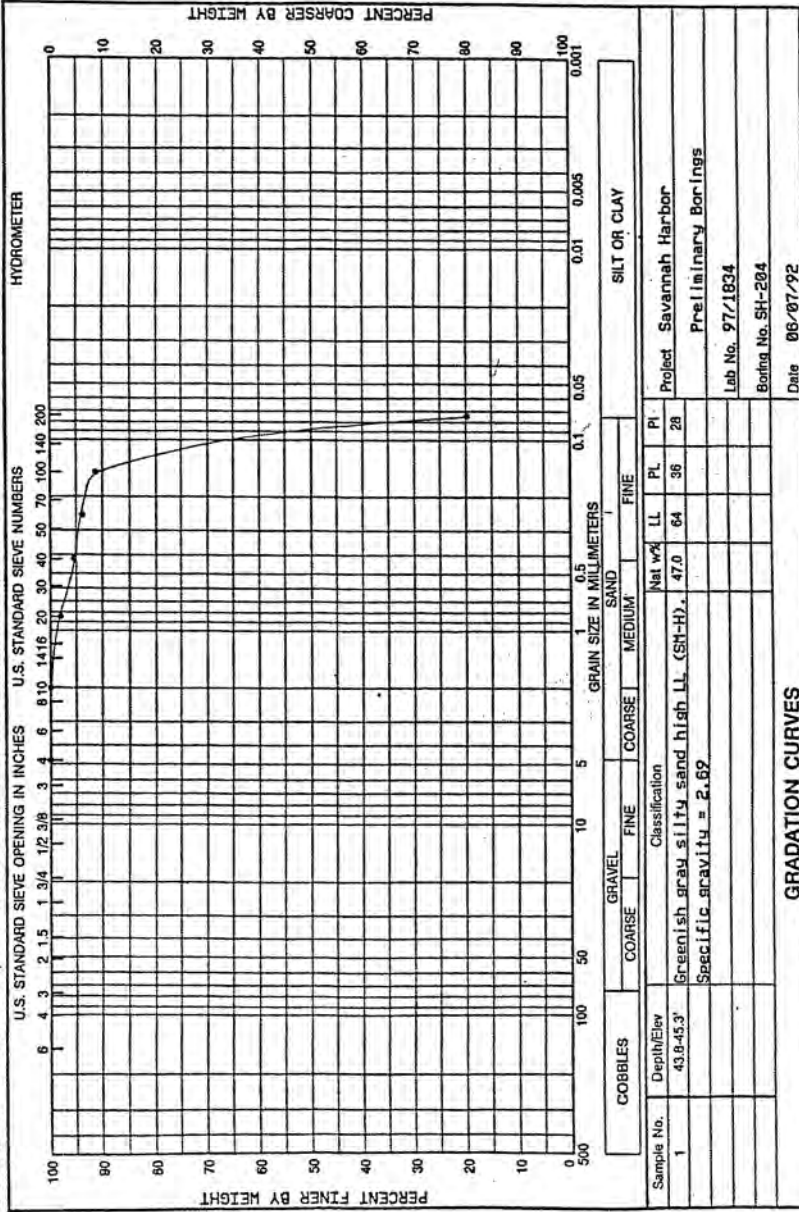






WORK ORDER: 6601  
REQUISITION: EN-GG-92-54

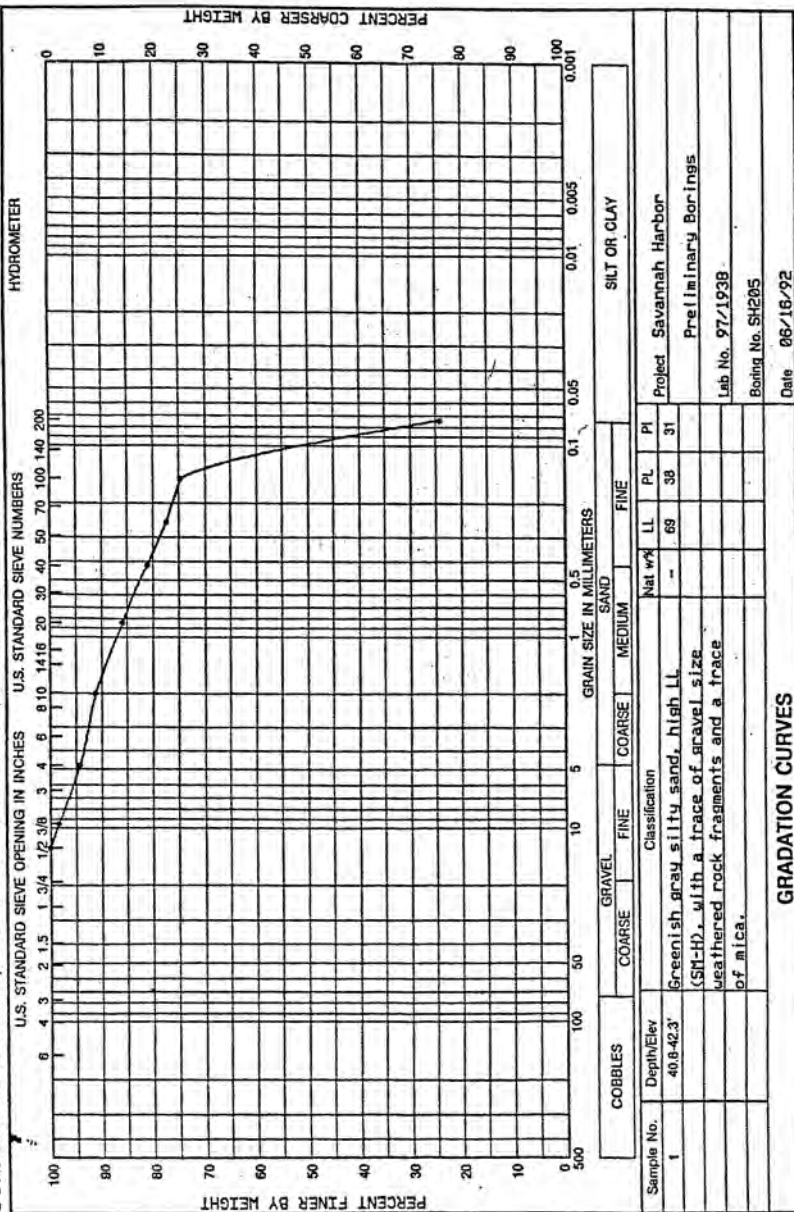
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





WORK ORDER: 6867  
 REQUISITION: EN-66-92-78

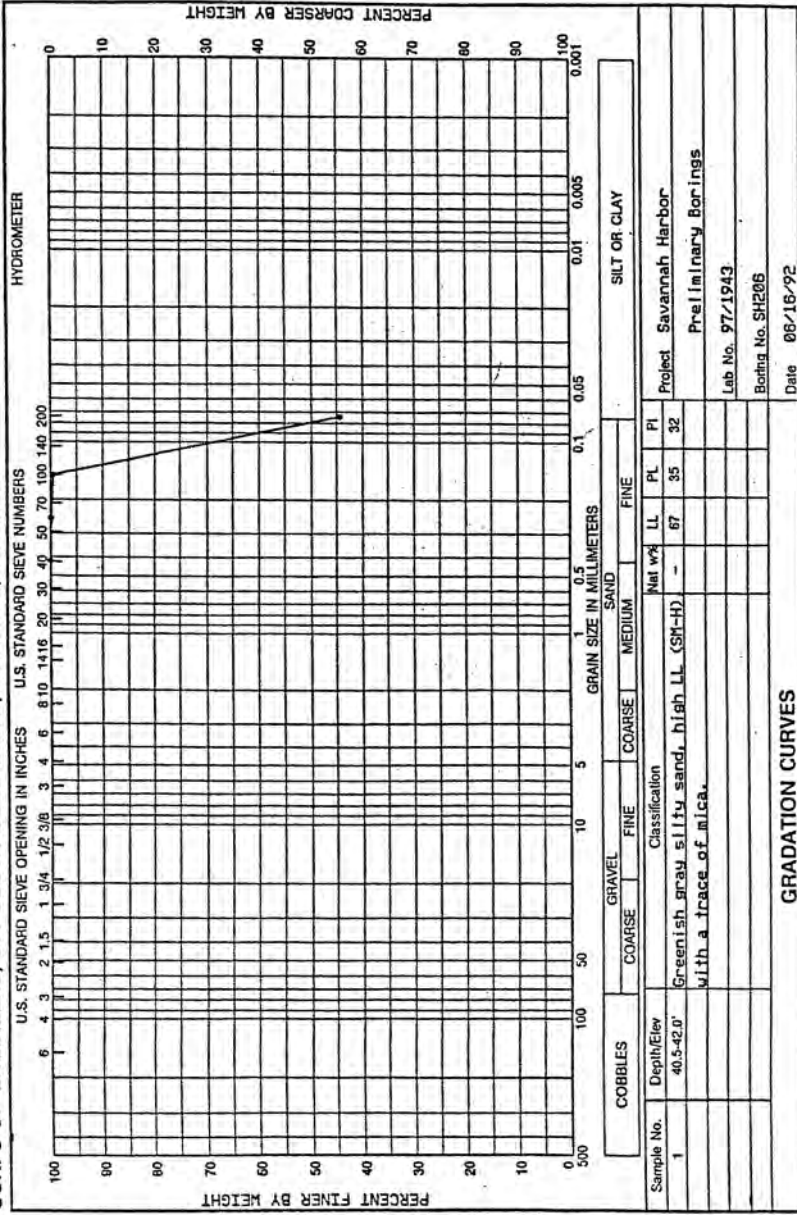
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





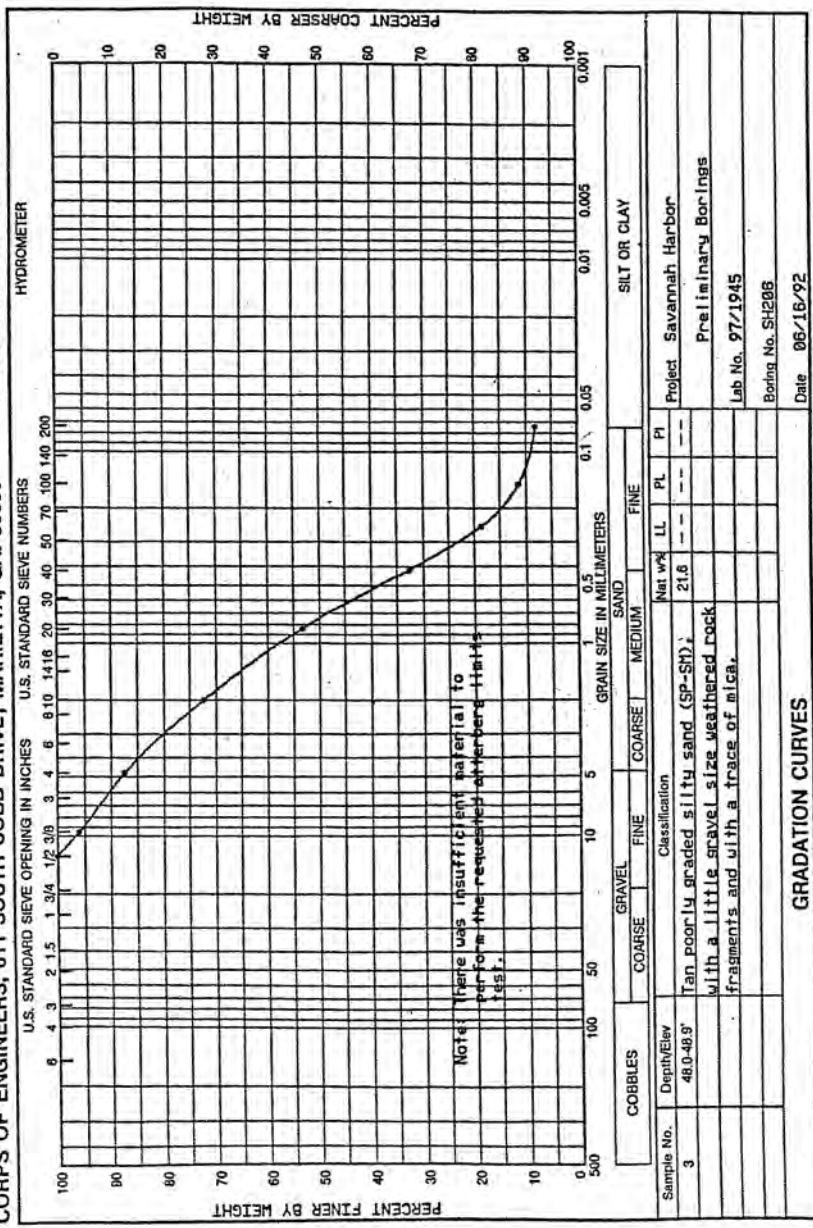
WORK ORDER: 6667  
REQUISITION: EN-GG-92-78

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



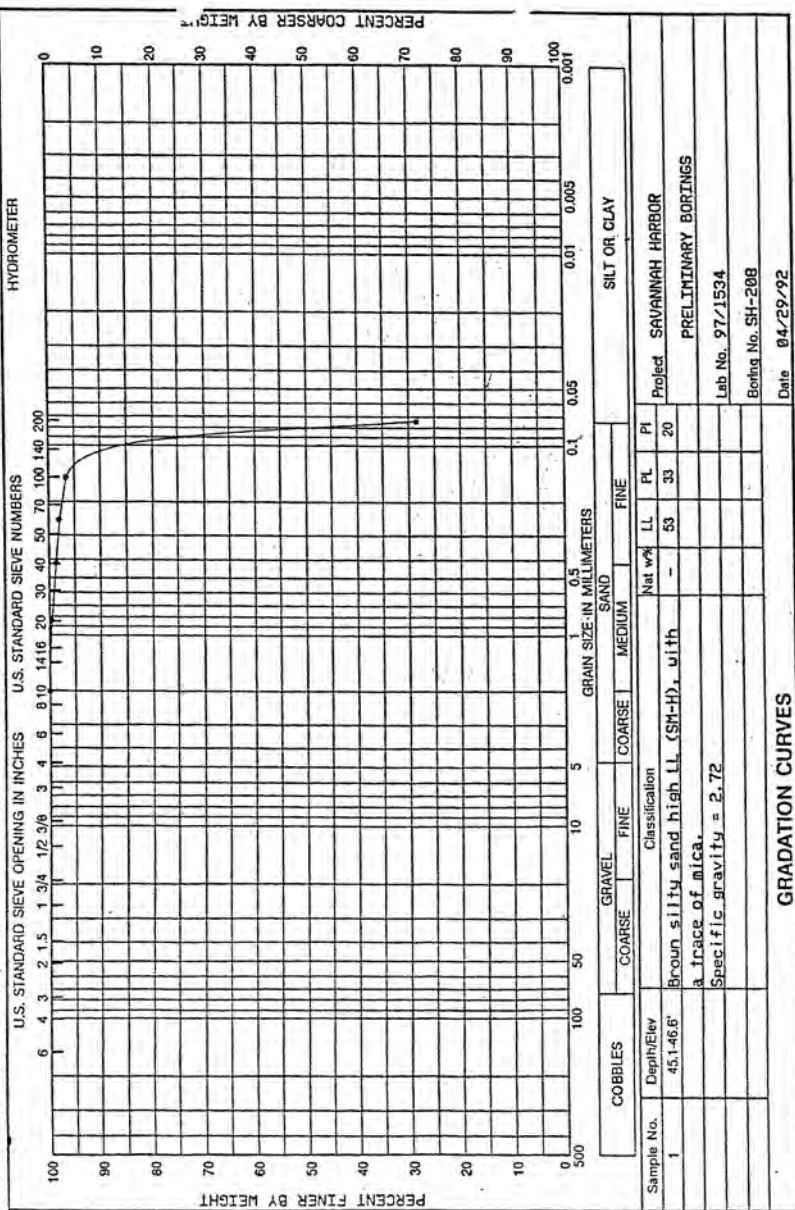
WORK ORDER: 6567  
REQUISITION: EN-65-92-78

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



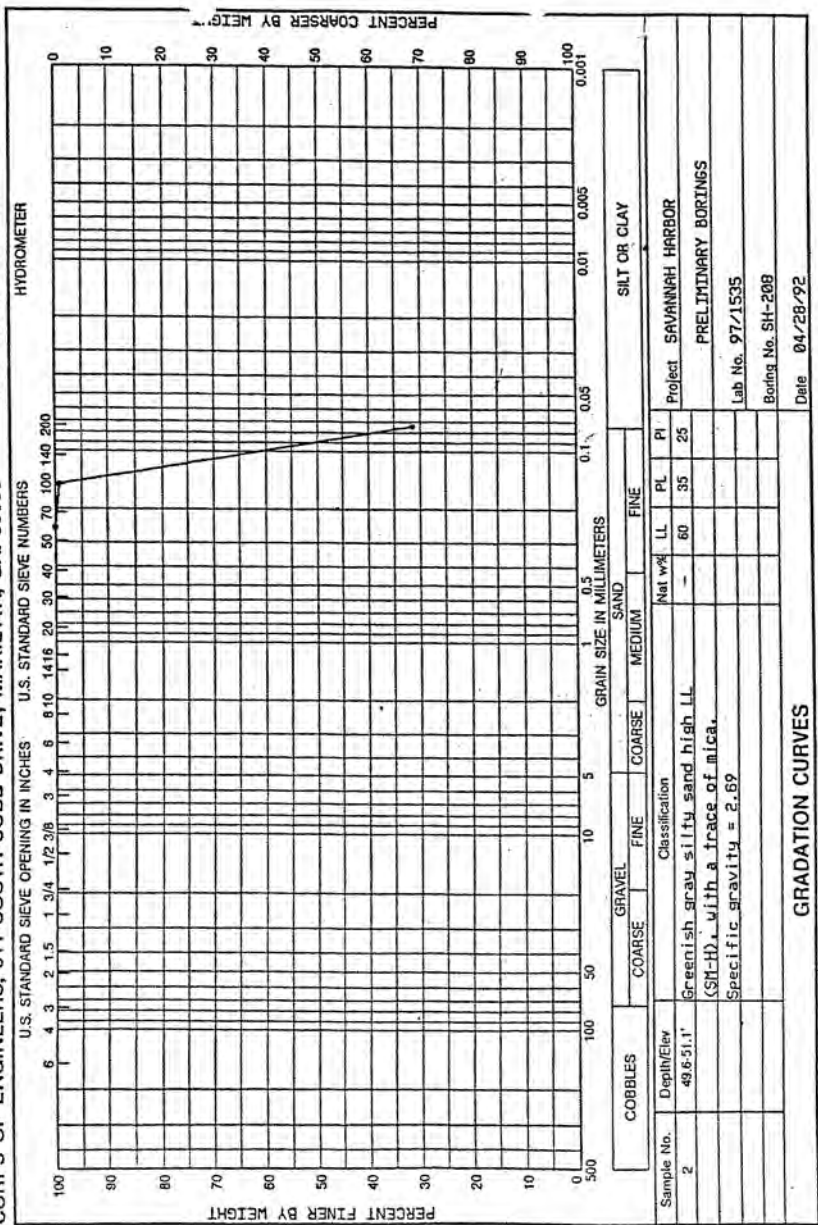
WORK ORDER: 6585  
REQUISITION: EN-GG-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



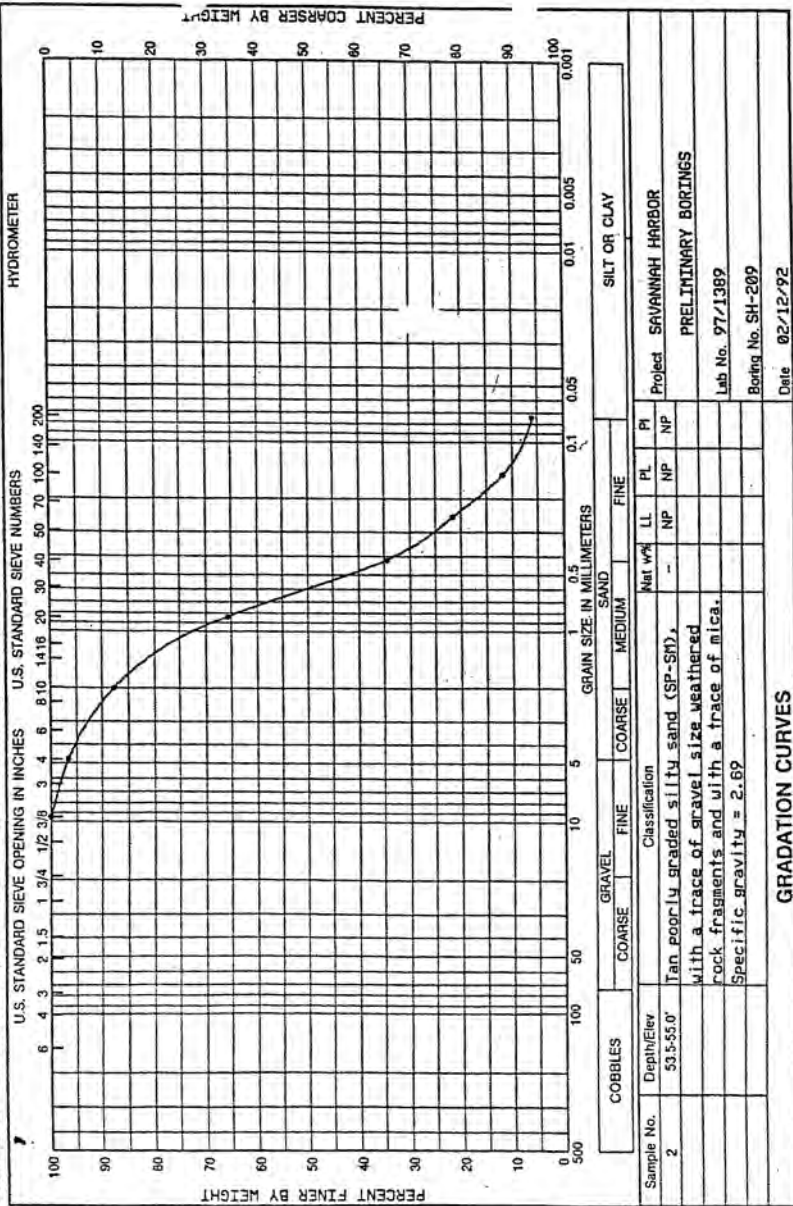
WORK ORDER: 6585  
REQUISITION: EN-65-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

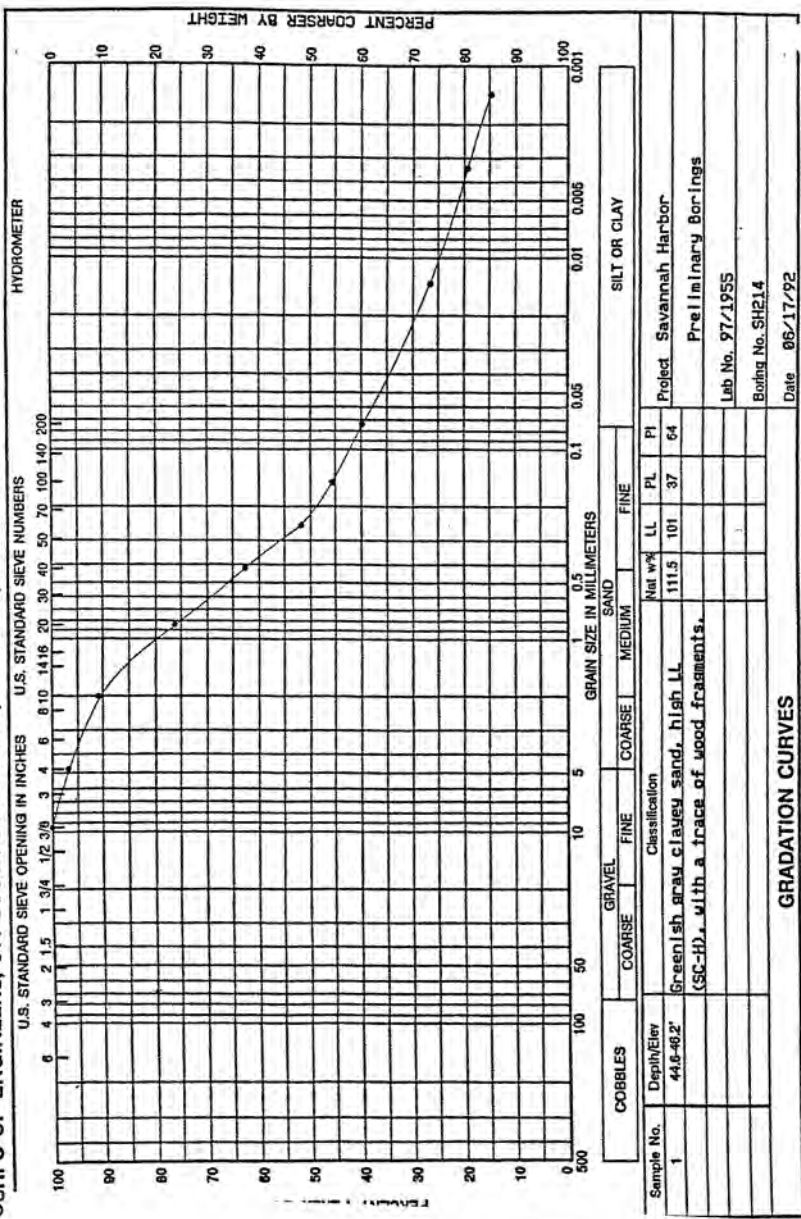
WORK ORDER: 6552  
REQUISITION: EN-GG-92-25





WORK ORDER: 6667  
REQUISITION: EN-66-92-78

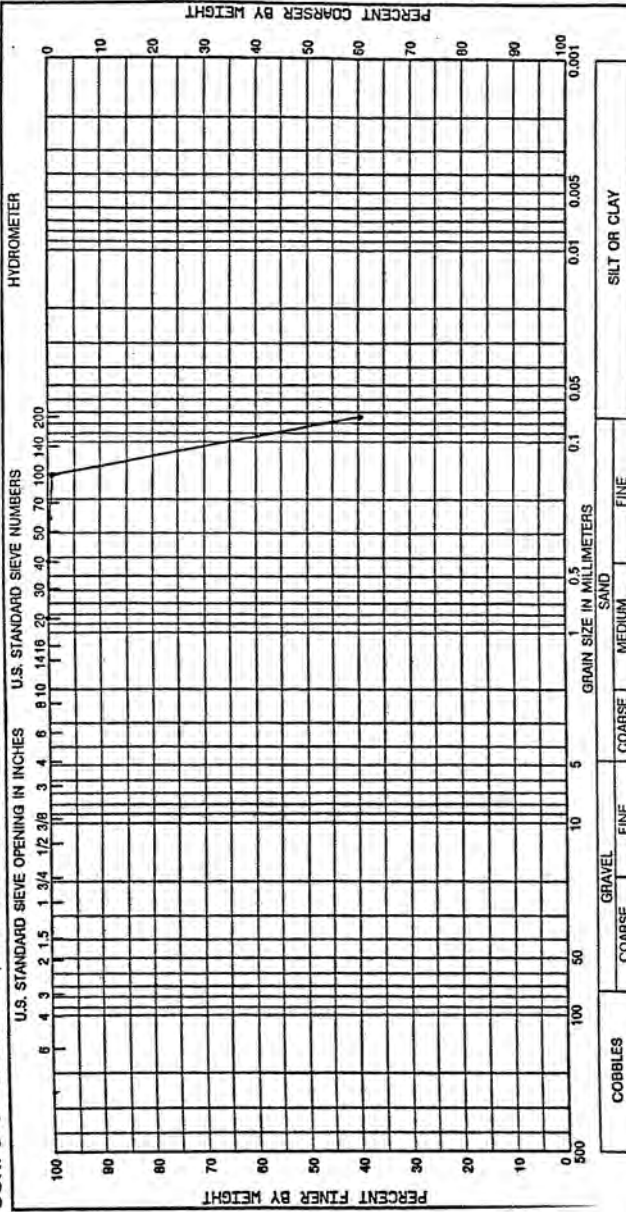
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





WORK ORDER: 6667  
REQUISITION: EN-GG-92-78

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



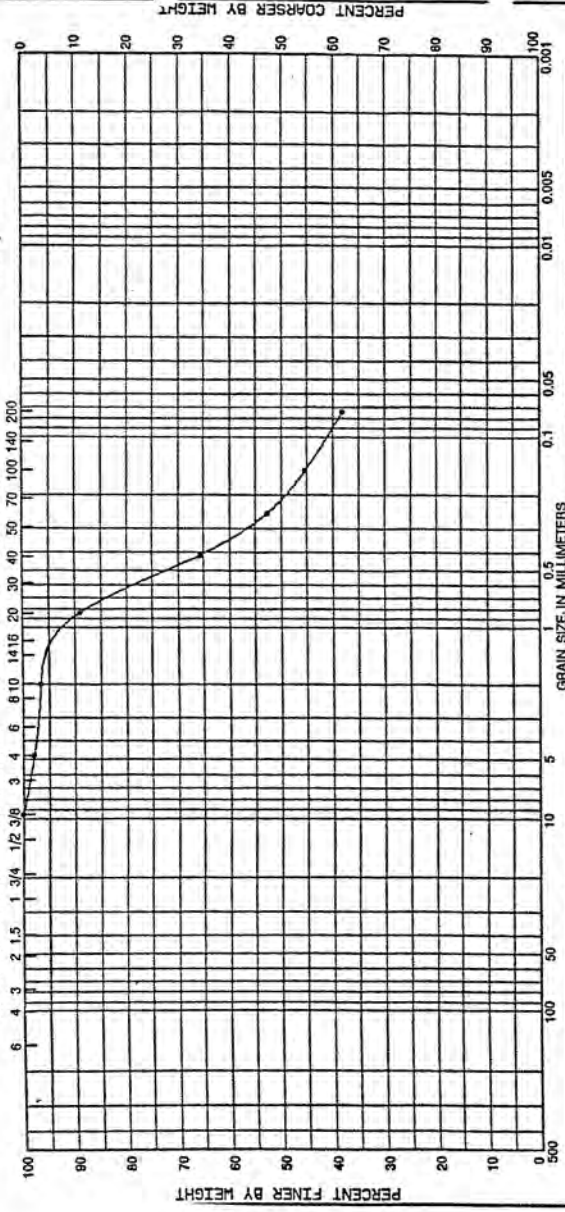
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

U.S. STANDARD SIEVE OPENING IN INCHES

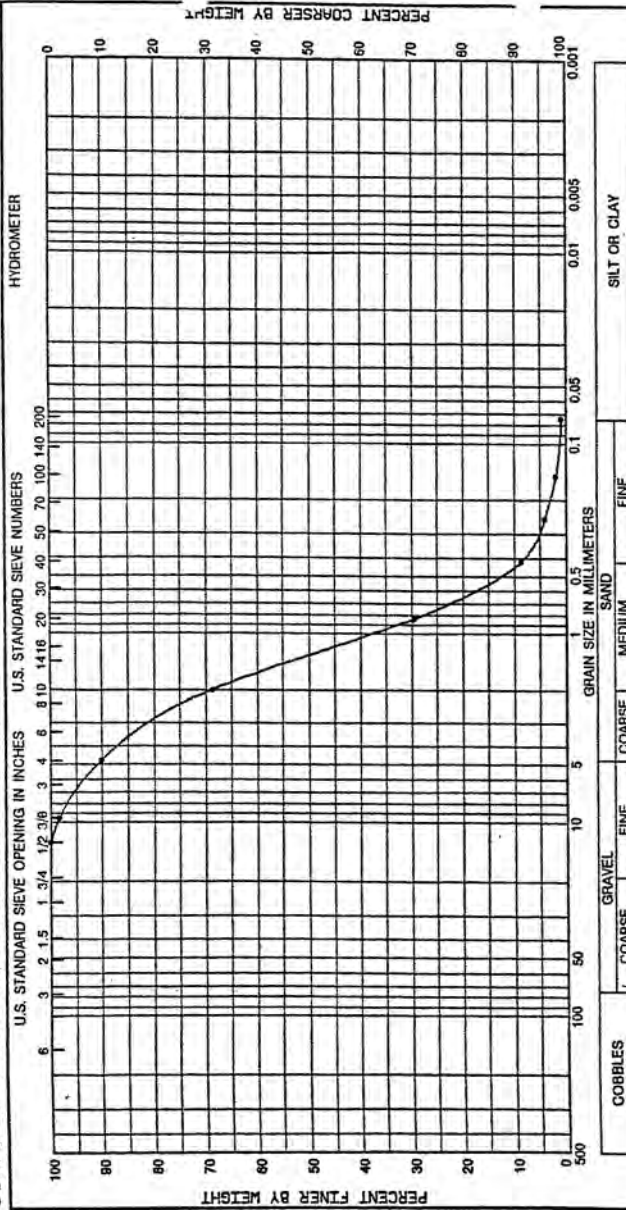
HYDROMETER

U.S. STANDARD SIEVE NUMBERS



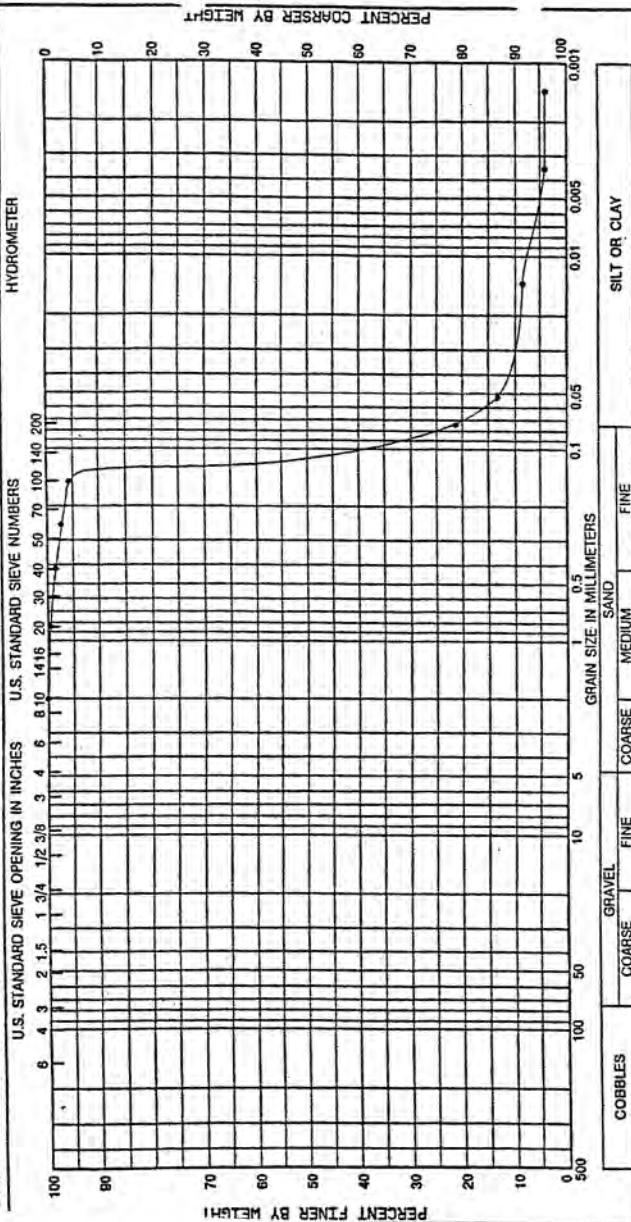
WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

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EPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 ORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
 REQUISITION: EN-66-92-25



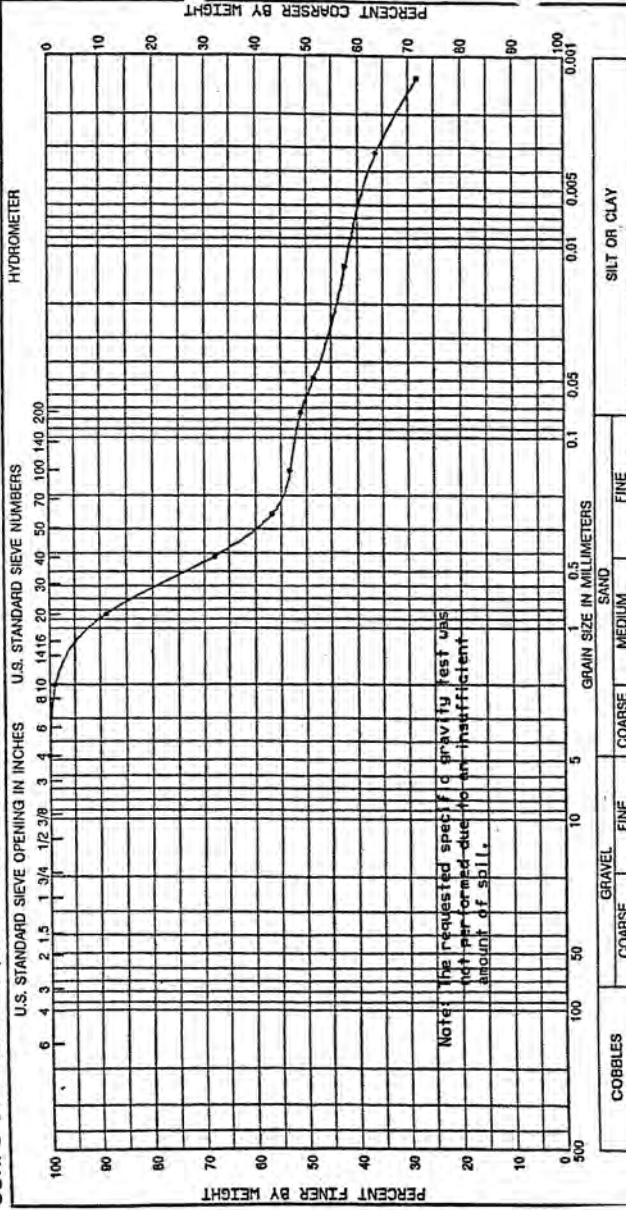
| Sample No. | Depth/Elev | GRAVEL                                                |      |        |      | SAND   |        |      |    | SILT OR CLAY |                         |  |  |
|------------|------------|-------------------------------------------------------|------|--------|------|--------|--------|------|----|--------------|-------------------------|--|--|
|            |            | COARSE                                                | FINE | COARSE | FINE | COARSE | MEDIUM | FINE | PL | PI           |                         |  |  |
| 3          | 56.5-60.0' | Gray silty sand high LL (SH-H), with a trace of mica. |      |        |      | 48.3   | 71     | 37   | 34 |              | Project SAVANNAH HARBOR |  |  |
|            |            | Specific gravity = 2.72                               |      |        |      |        |        |      |    |              | PRELIMINARY BORINGS     |  |  |
|            |            |                                                       |      |        |      |        |        |      |    |              | Lab No. 97/1394         |  |  |
|            |            |                                                       |      |        |      |        |        |      |    |              | Boring No. SH-215       |  |  |
|            |            |                                                       |      |        |      |        |        |      |    |              | Date 02/14/92           |  |  |

GRADATION CURVES



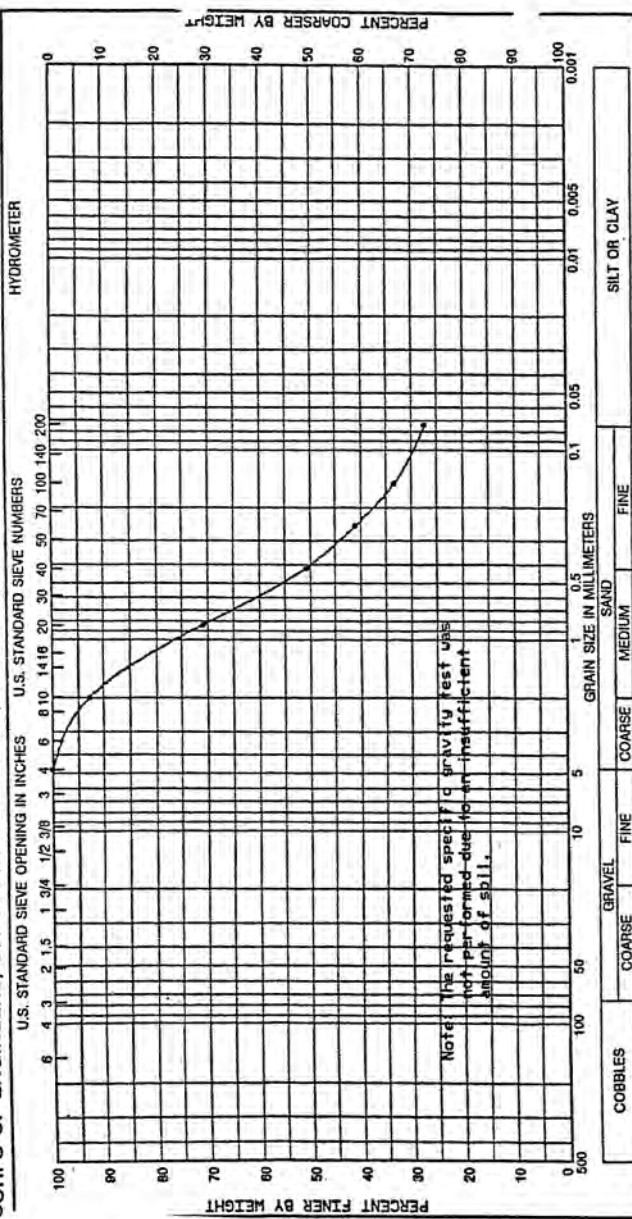
WORK ORDER: 6600  
REQUISITION: EN-65-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



WORK ORDER: 6508  
REQUISITION: EN-65-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



| Sample No. | Depth/Elev | Classification                                             |      |        |      | Project |    |    |                                             |
|------------|------------|------------------------------------------------------------|------|--------|------|---------|----|----|---------------------------------------------|
|            |            | COARSE                                                     | FINE | COARSE | FINE | LL      | PL | PI |                                             |
| 3          | 44.0-45.0' | Dk. gray clayey sand high LL (SC-H), with a trace of mica. |      |        |      | 90      | 34 | 56 | Project Savannah Harbor Preliminary Borings |
|            |            |                                                            |      |        |      |         |    |    | Lab No. 97/1712                             |
|            |            |                                                            |      |        |      |         |    |    | Boring No. SH-218                           |
|            |            |                                                            |      |        |      |         |    |    | Date 05/13/92                               |

GRADATION CURVES

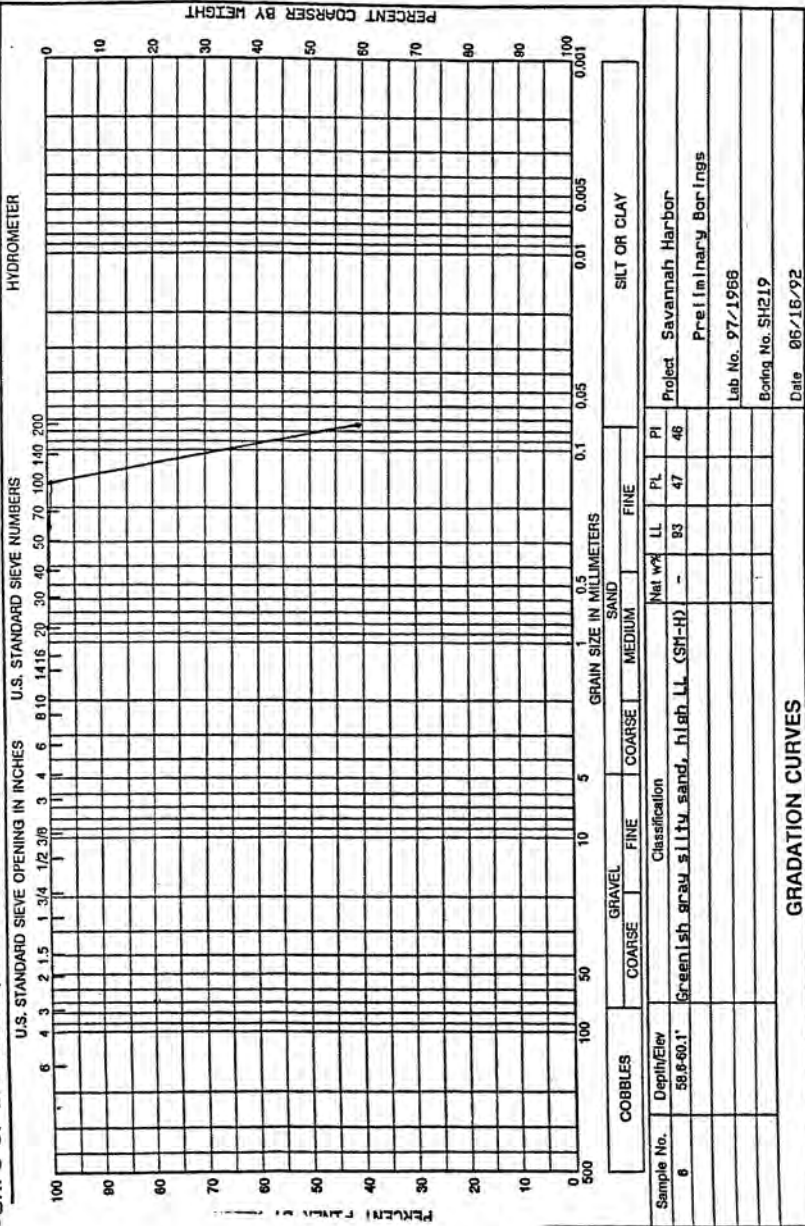






DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

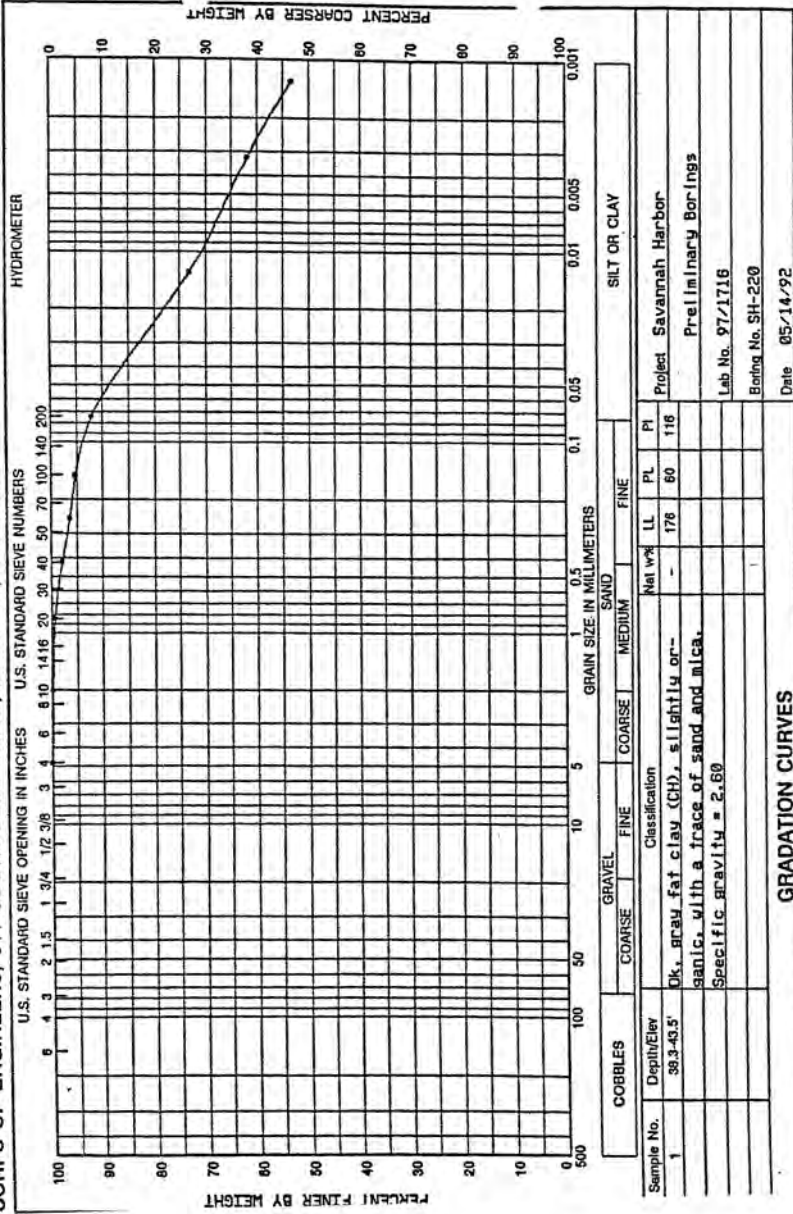
WORK ORDER: 6667  
REQUISITION: EN-GG-92-78





WORK ORDER: 6600  
REQUISITION: EN-GG-92-53

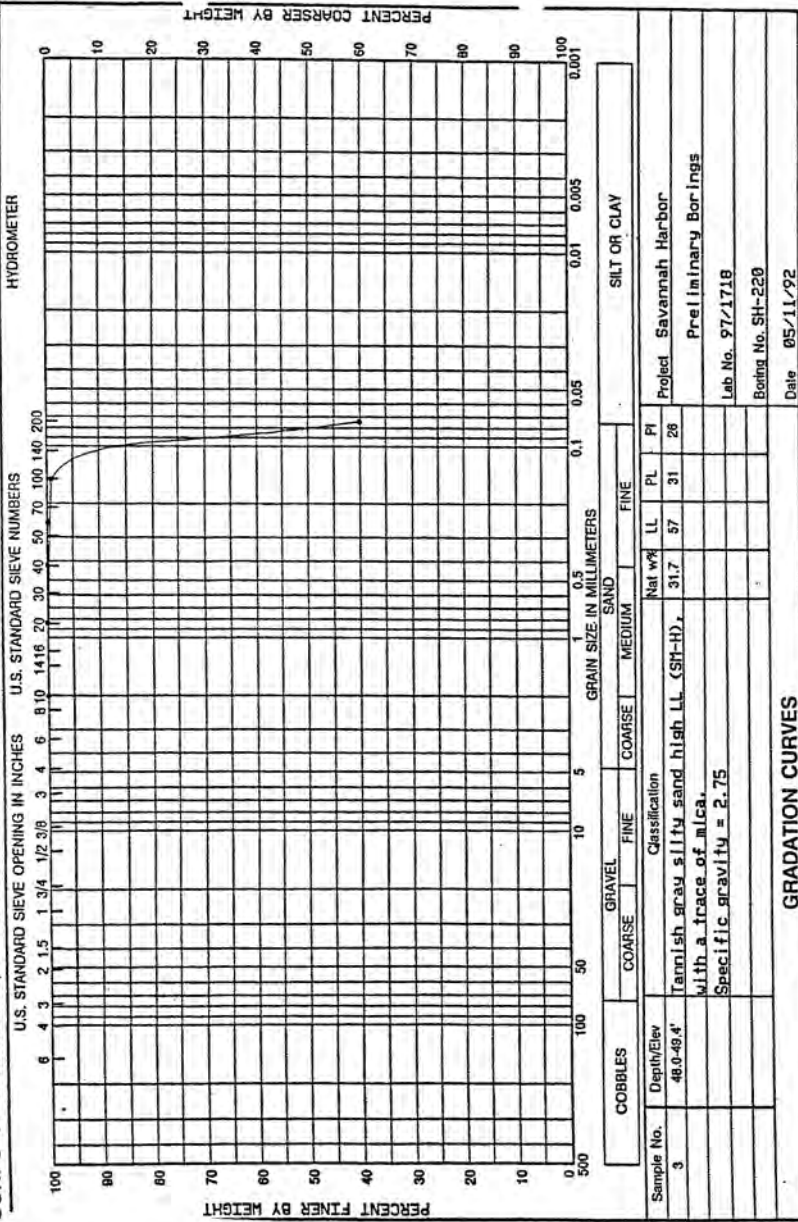
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



| Sample No. | COBBLES    | GRAVEL                                                                   |      |        |        | SAND |        |        |      | SILT OR CLAY |
|------------|------------|--------------------------------------------------------------------------|------|--------|--------|------|--------|--------|------|--------------|
|            |            | COARSE                                                                   | FINE | COARSE | MEDIUM | FINE | COARSE | MEDIUM | FINE |              |
|            | Depth/Elev |                                                                          |      |        |        |      |        |        |      |              |
| 1          | 39.3-43.5' | Classification                                                           |      |        |        |      |        |        |      |              |
|            |            | Ok, gray fat clay (CH), slightly organic, with a trace of sand and mica. |      |        |        |      |        |        |      |              |
|            |            | Specific gravity = 2.69                                                  |      |        |        |      |        |        |      |              |
|            |            | Moisture Content                                                         |      |        |        |      |        |        |      |              |
|            |            | Liquid Limit                                                             |      |        |        |      |        |        |      |              |
|            |            | Plastic Limit                                                            |      |        |        |      |        |        |      |              |
|            |            | Shrinkage                                                                |      |        |        |      |        |        |      |              |
|            |            | Soil No. 97/1716                                                         |      |        |        |      |        |        |      |              |
|            |            | Boiling No. SH-220                                                       |      |        |        |      |        |        |      |              |
|            |            | Date 05/14/92                                                            |      |        |        |      |        |        |      |              |

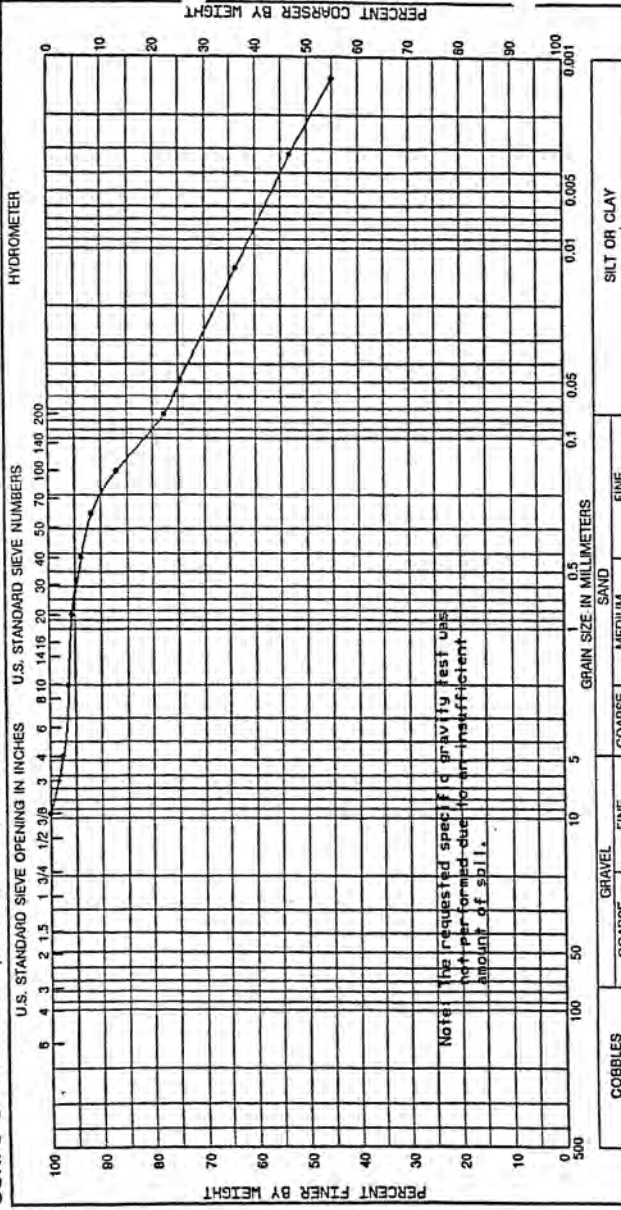
WORK ORDER: 6600  
REQUISITION: EN-GG-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



WORK ORDER: 6600  
REQUISITION: EN-66-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



| Sample No. | Depth/Elev | GRAVEL                                                                                                               |      |        |      | SAND   |        |      |    | SILT OR CLAY            |    |    |    |
|------------|------------|----------------------------------------------------------------------------------------------------------------------|------|--------|------|--------|--------|------|----|-------------------------|----|----|----|
|            |            | COARSE                                                                                                               | FINE | COARSE | FINE | COARSE | MEDIUM | FINE | PI | LL                      | PL | PI | PI |
| 1          | 45.8-48.1' | Classification                                                                                                       |      |        |      | Net wt | LL     | PL   | PI | Project Savannah Harbor |    |    |    |
|            |            | Dk. gray inorganic silt high LL (MH), with some sand and with a trace of mica and gravel size rusty metal fragments. |      |        |      | 224.3  | 143    | 55   | 88 | Preliminary Borings     |    |    |    |
|            |            |                                                                                                                      |      |        |      |        |        |      |    | Lab No. 97/1723         |    |    |    |
|            |            |                                                                                                                      |      |        |      |        |        |      |    | Boring No. SH-221       |    |    |    |
|            |            |                                                                                                                      |      |        |      |        |        |      |    | Date 05/11/92           |    |    |    |

GRADATION CURVES

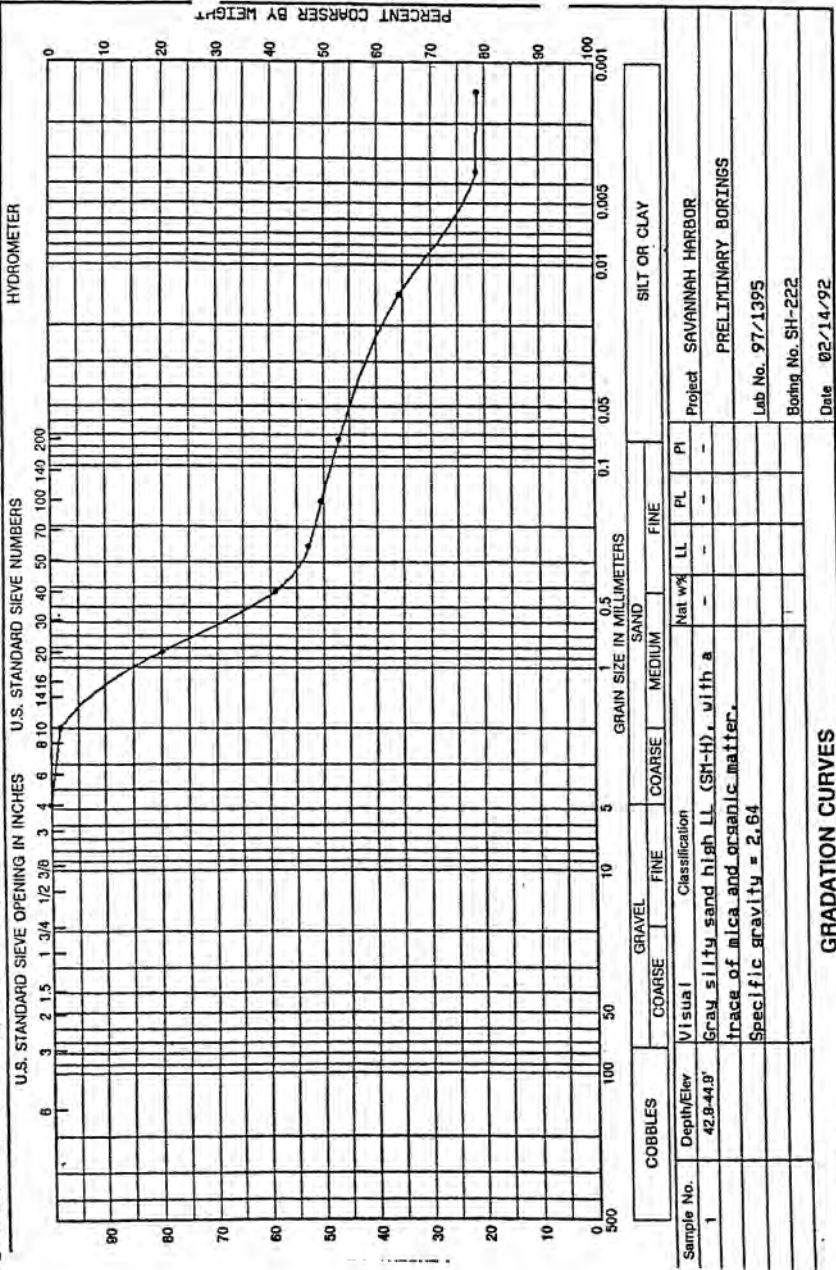


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

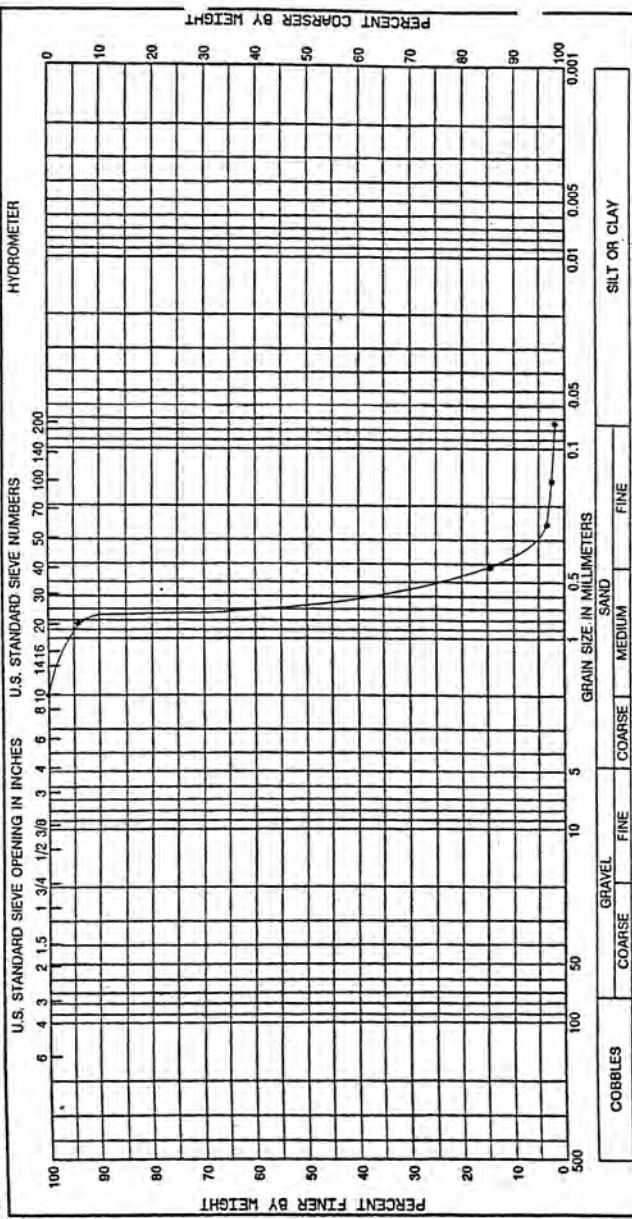
HYDROMETER

U.S. STANDARD SIEVE OPENING IN INCHES U.S. STANDARD SIEVE NUMBERS



WORK ORDER: 6552  
REQUISITION: EN-66-92-25

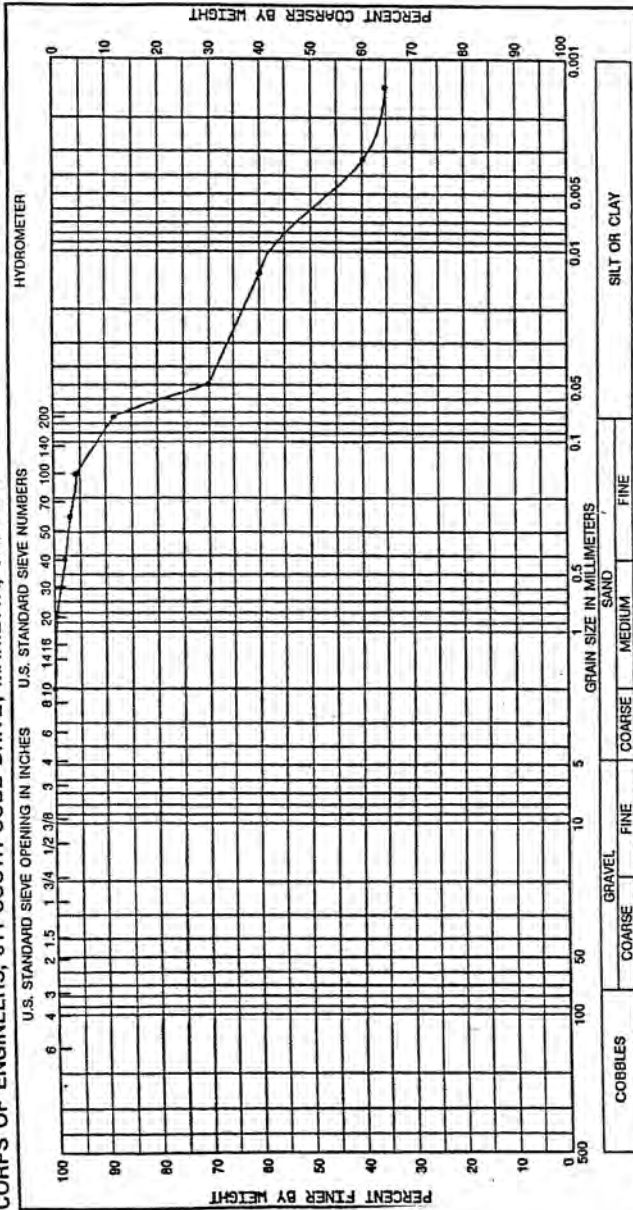
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



| Sample No.              | Depth/Elev | Classification                                                                                                | Nat w% | LL | PL | PI |
|-------------------------|------------|---------------------------------------------------------------------------------------------------------------|--------|----|----|----|
| 2                       | 46.3-48.6' | Tan poorly graded sand (SP), with a trace of gravel size weathered rock fragments.<br>Specific gravity = 2.67 | -      | NP | NP |    |
| Project Savannah Harbor |            |                                                                                                               |        |    |    |    |
| Preliminary Borings     |            |                                                                                                               |        |    |    |    |
| Lab No. 97-1839         |            |                                                                                                               |        |    |    |    |
| Boring No. SH-223       |            |                                                                                                               |        |    |    |    |
| Date 06/07/92           |            |                                                                                                               |        |    |    |    |

WORK ORDER: 6801  
REQUISITION: EN-6G-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



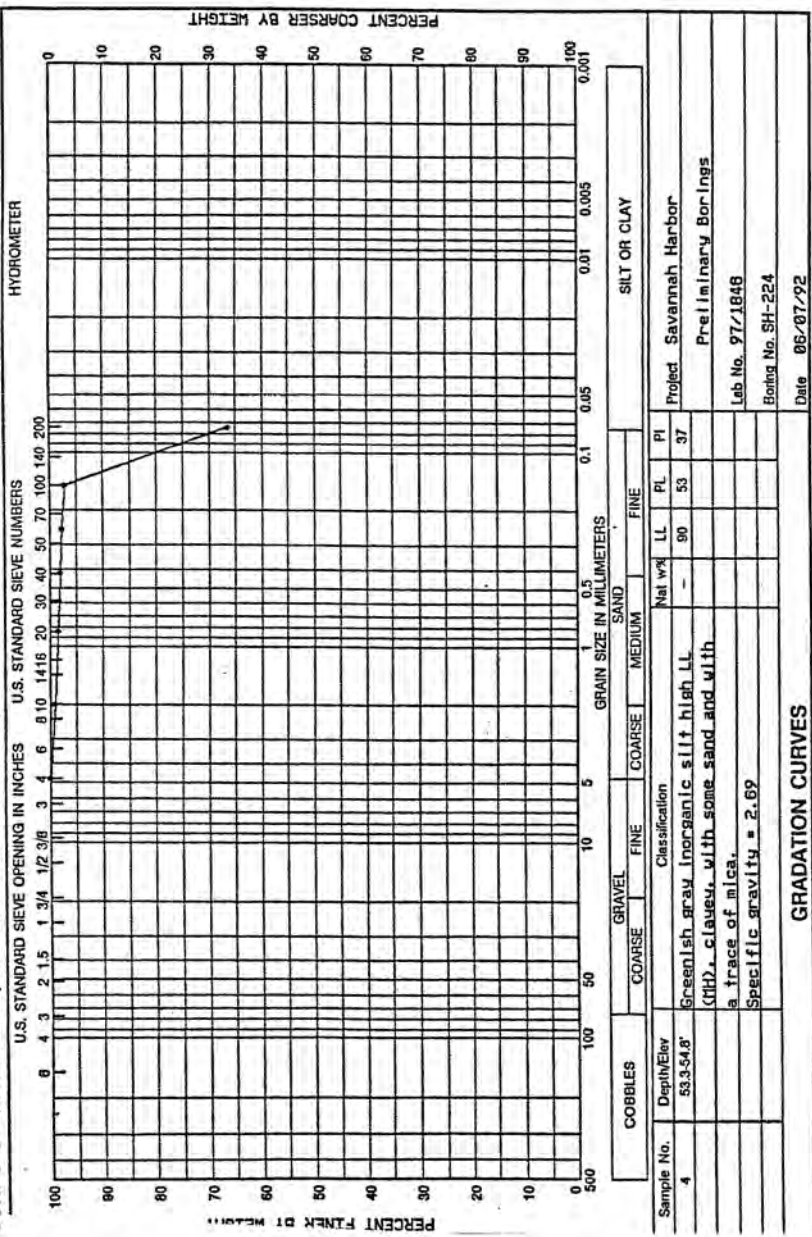
| Sample No. | Depth/Elev | Classification                                                                          | Nat w% | LL  | PL | PI  |
|------------|------------|-----------------------------------------------------------------------------------------|--------|-----|----|-----|
| 1          | 41.5-44.3' | Ok. gray fat clay (CH), with a little sand and with a trace of mica and organic matter. | 201.3  | 163 | 54 | 109 |
|            |            | Specific gravity = 2.68                                                                 |        |     |    |     |
|            |            |                                                                                         |        |     |    |     |
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GRADATION CURVES





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6601  
REQUISITION: EN-66-92-54





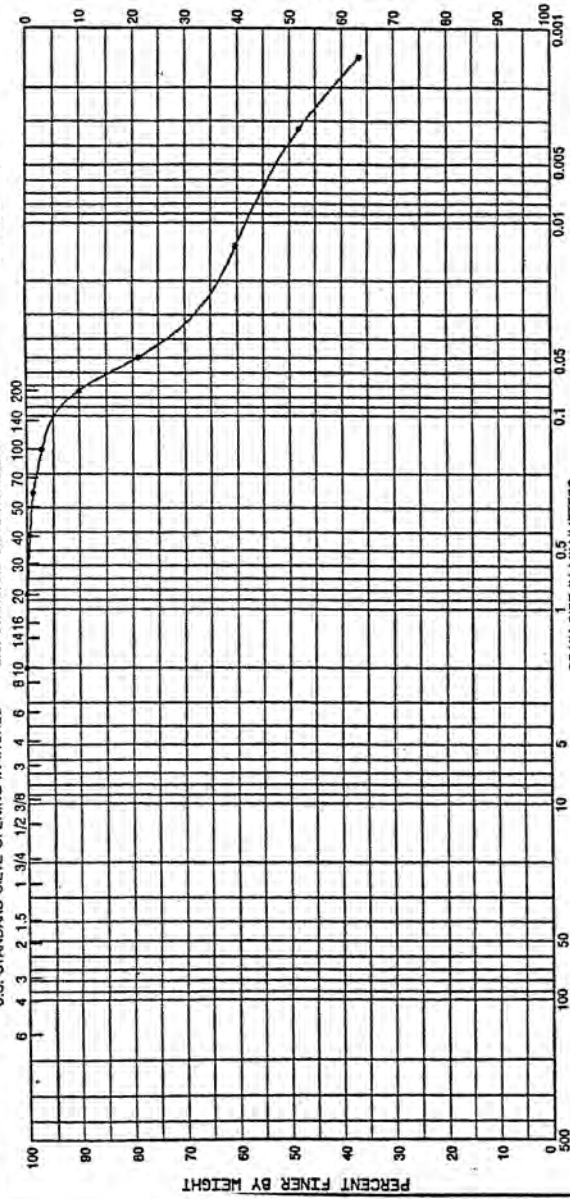


WORK ORDER: 6601  
REQUISITION: EN-65-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

U.S. STANDARD SIEVE OPENING IN INCHES U.S. STANDARD SIEVE NUMBERS

HYDROMETER



| Sample No. | Depth/Elev | GRAVEL |      |        |      | SAND   |        |      |    | SILT OR CLAY |    |    |  |
|------------|------------|--------|------|--------|------|--------|--------|------|----|--------------|----|----|--|
|            |            | COARSE | FINE | COARSE | FINE | COARSE | MEDIUM | FINE | PI | LL           | PL | PI |  |

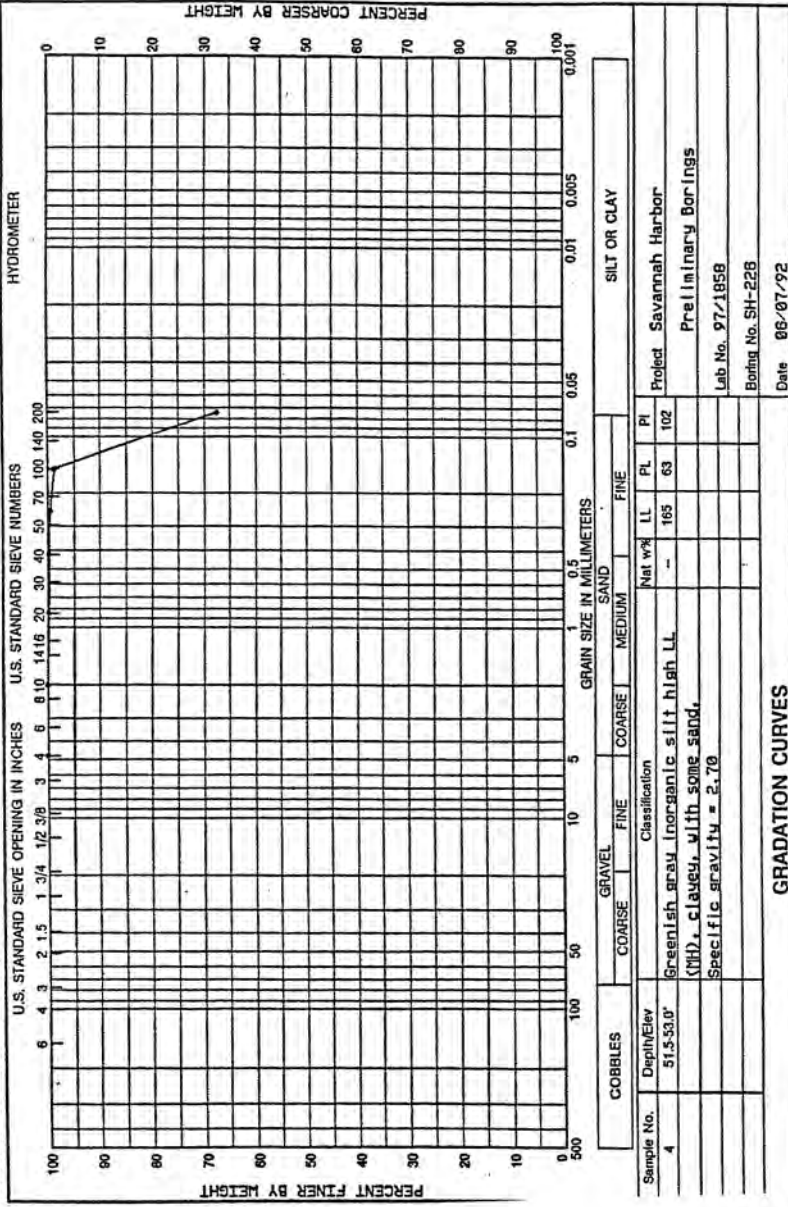
|   |            |                                                                        |  |  |  |   |  |  |  |     |    |     |                         |
|---|------------|------------------------------------------------------------------------|--|--|--|---|--|--|--|-----|----|-----|-------------------------|
| 1 | 42.2-46.3' | Dk. gray fat clay (CH), with a trace of sand, mica and organic matter. |  |  |  | - |  |  |  | 161 | 52 | 109 | Project Savannah Harbor |
|   |            | Specific gravity = 2.60                                                |  |  |  |   |  |  |  |     |    |     | Preliminary Borings     |
|   |            |                                                                        |  |  |  |   |  |  |  |     |    |     | Lab No. 97/1855         |
|   |            |                                                                        |  |  |  |   |  |  |  |     |    |     | Boring No. SH-226       |
|   |            |                                                                        |  |  |  |   |  |  |  |     |    |     | Date 06/07/92           |

GRADATION CURVES



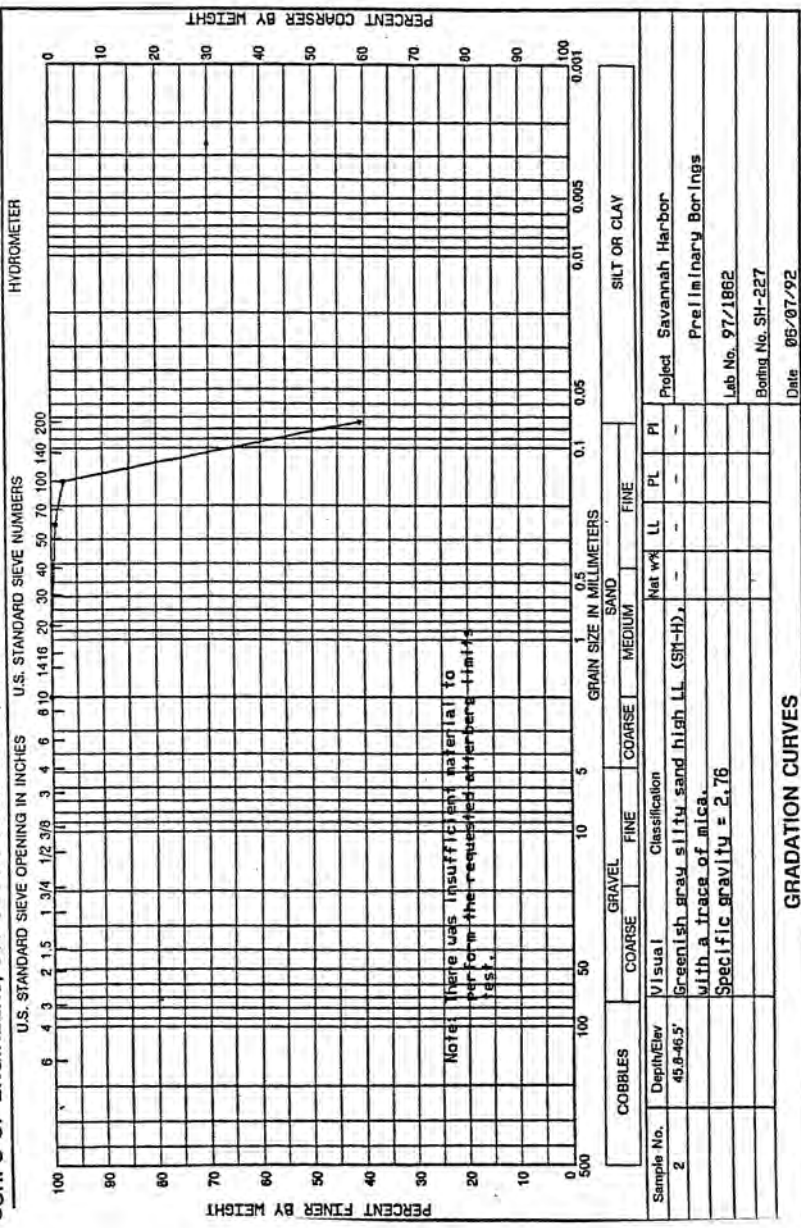
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6601  
REQUISITION: EN-66-92-54



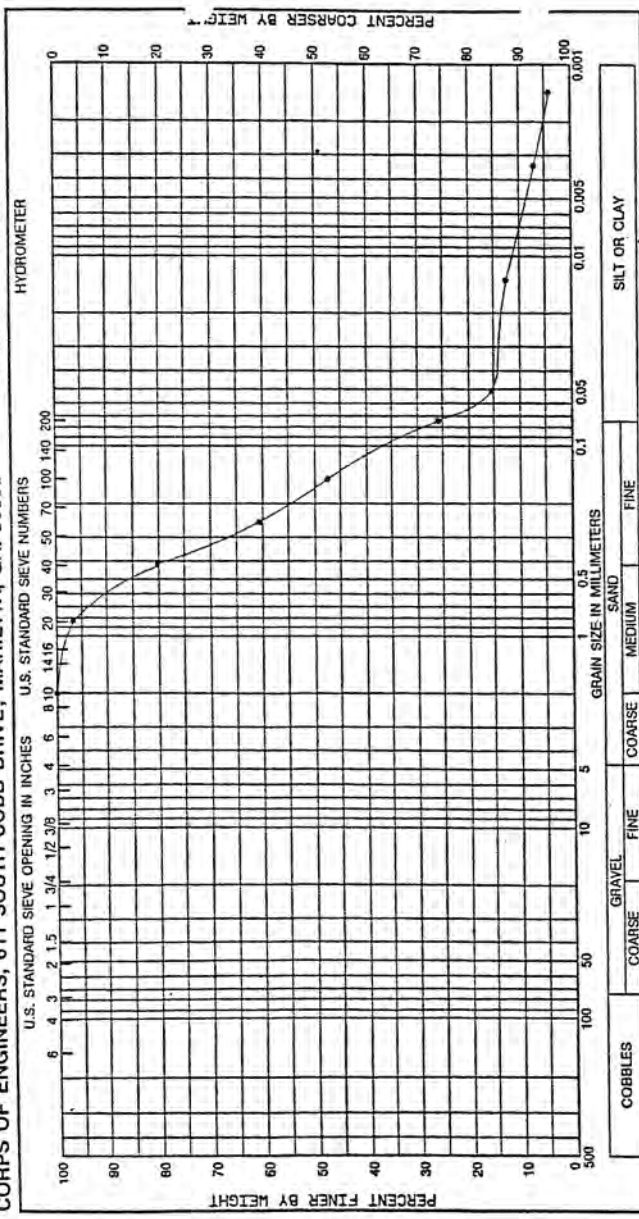
WORK ORDER: 6681  
REQUISITION: EN-66-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



WORK ORDER: 6585  
REQUISITION: EN-GG-92-37

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



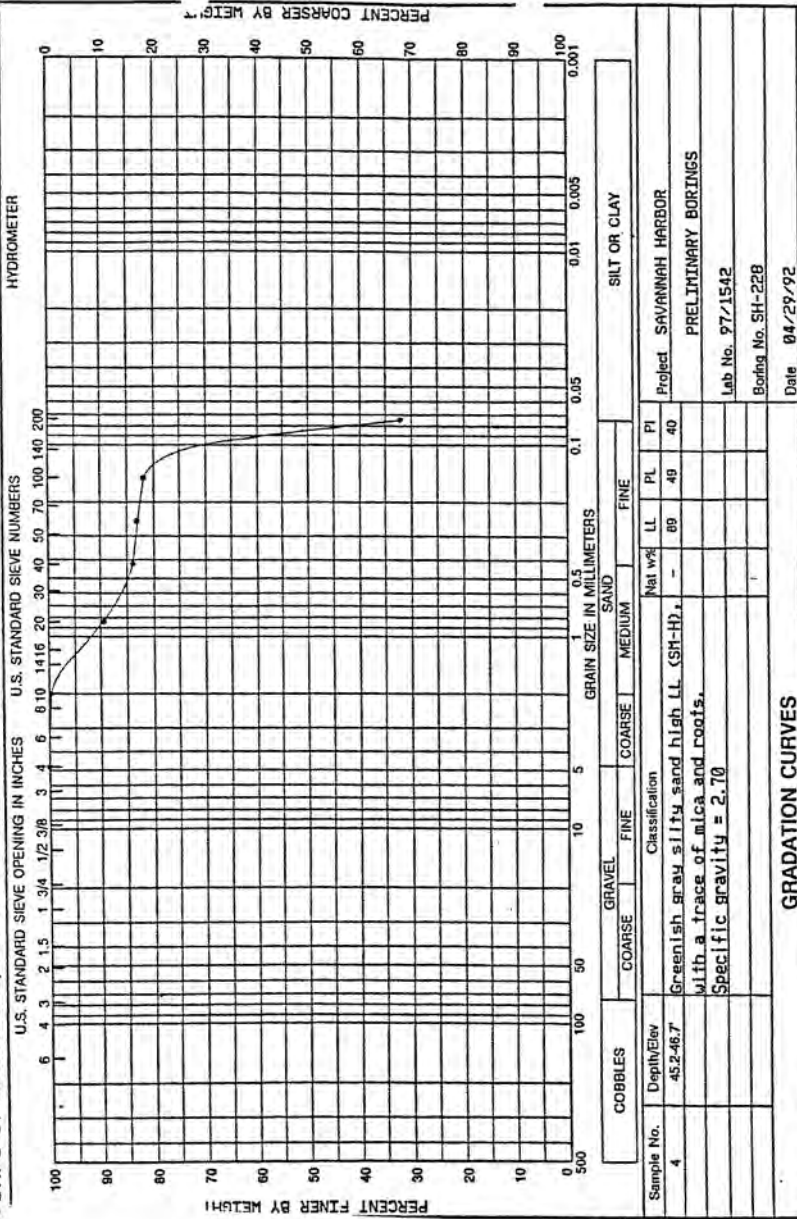
|            |   |            |            |                |                                                                   |        |   |    |    |    |    |    |    |         |                     |
|------------|---|------------|------------|----------------|-------------------------------------------------------------------|--------|---|----|----|----|----|----|----|---------|---------------------|
| Sample No. | 1 | Depth/Elev | 33.2-36.2' | Classification | Ok. gray clayey sand (SC), with a trace of mica. roots and shell. | Nat w% | - | LL | 49 | PL | 24 | PI | 25 | Project | SAVANNAH HARBOR     |
|            |   |            |            |                | Specific gravity = 2.67                                           |        |   |    |    |    |    |    |    |         | PRELIMINARY BORINGS |
|            |   |            |            |                |                                                                   |        |   |    |    |    |    |    |    |         | Lab No. 97/1539     |
|            |   |            |            |                |                                                                   |        |   |    |    |    |    |    |    |         | Boring No. SH-228   |
|            |   |            |            |                |                                                                   |        |   |    |    |    |    |    |    |         | Date 04/29/92       |

GRADATION CURVES



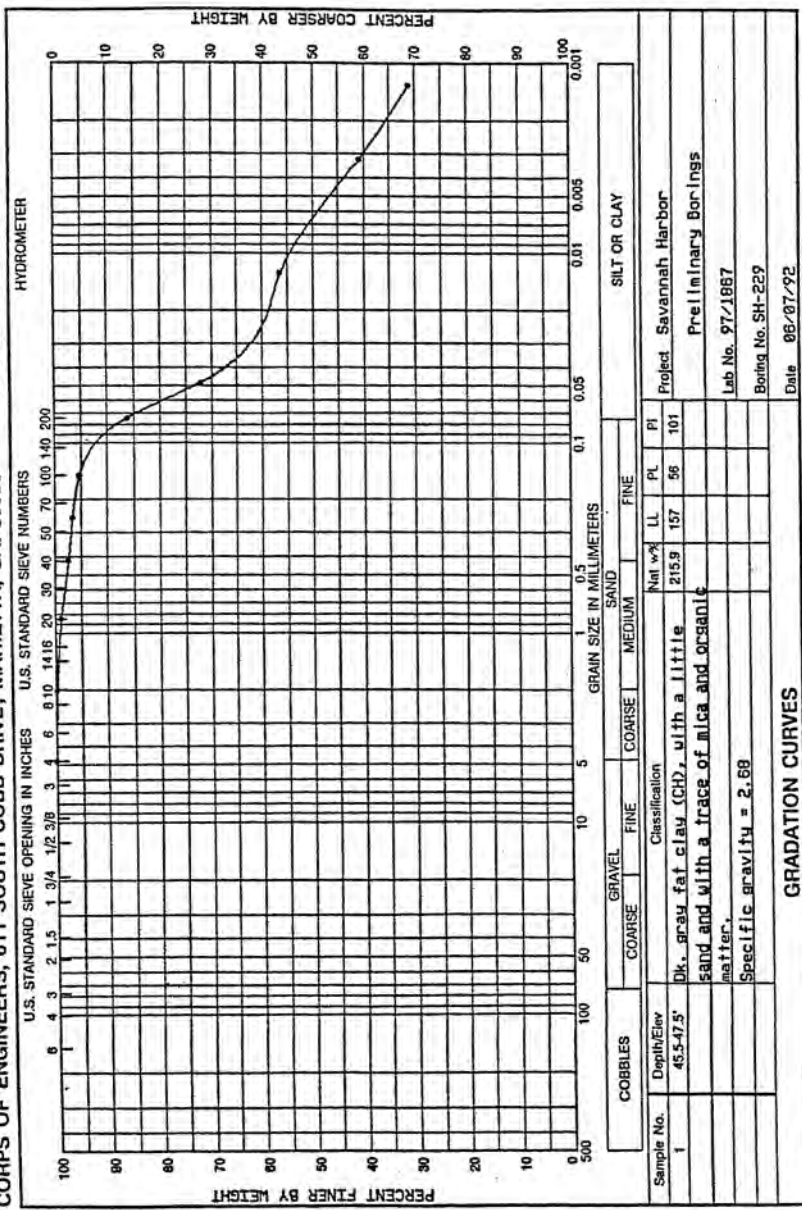
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6565  
REQUISITION: EN-65-92-37



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

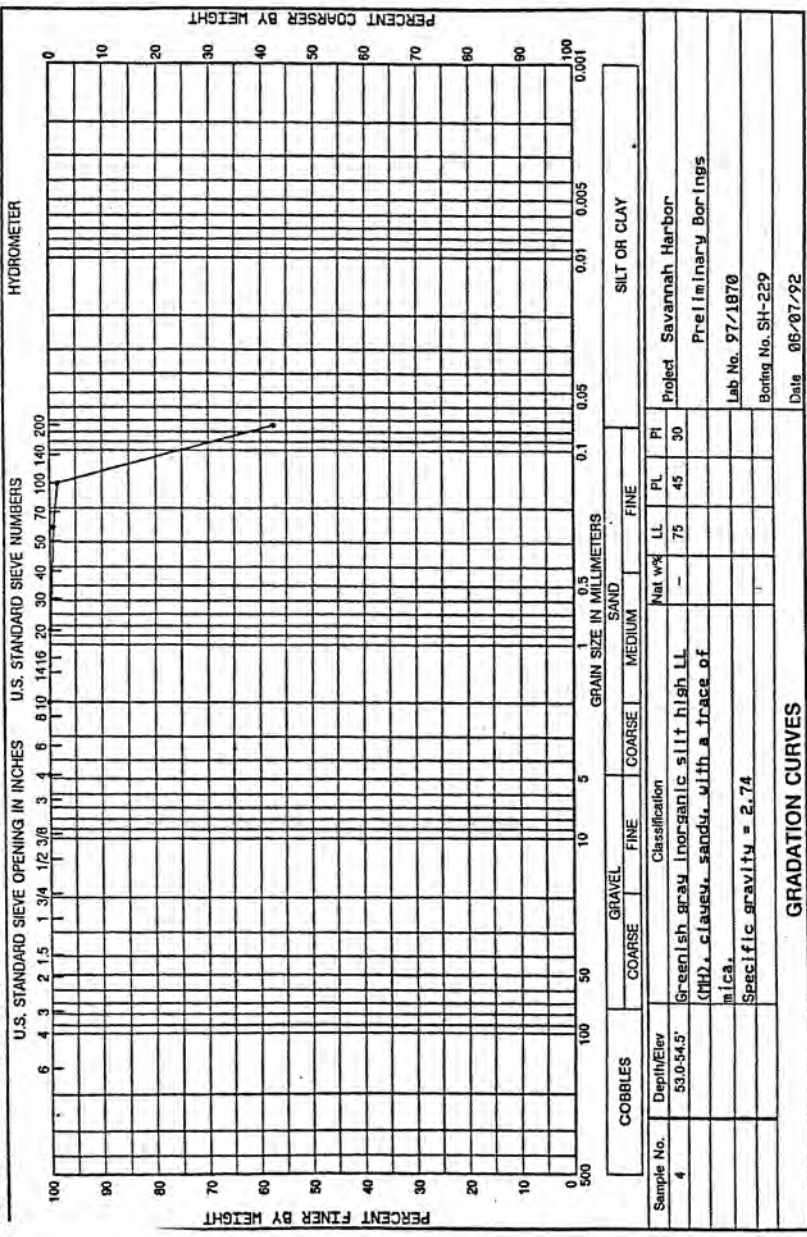
WORK ORDER: 6581  
REQUISITION: EN-GG-92-54





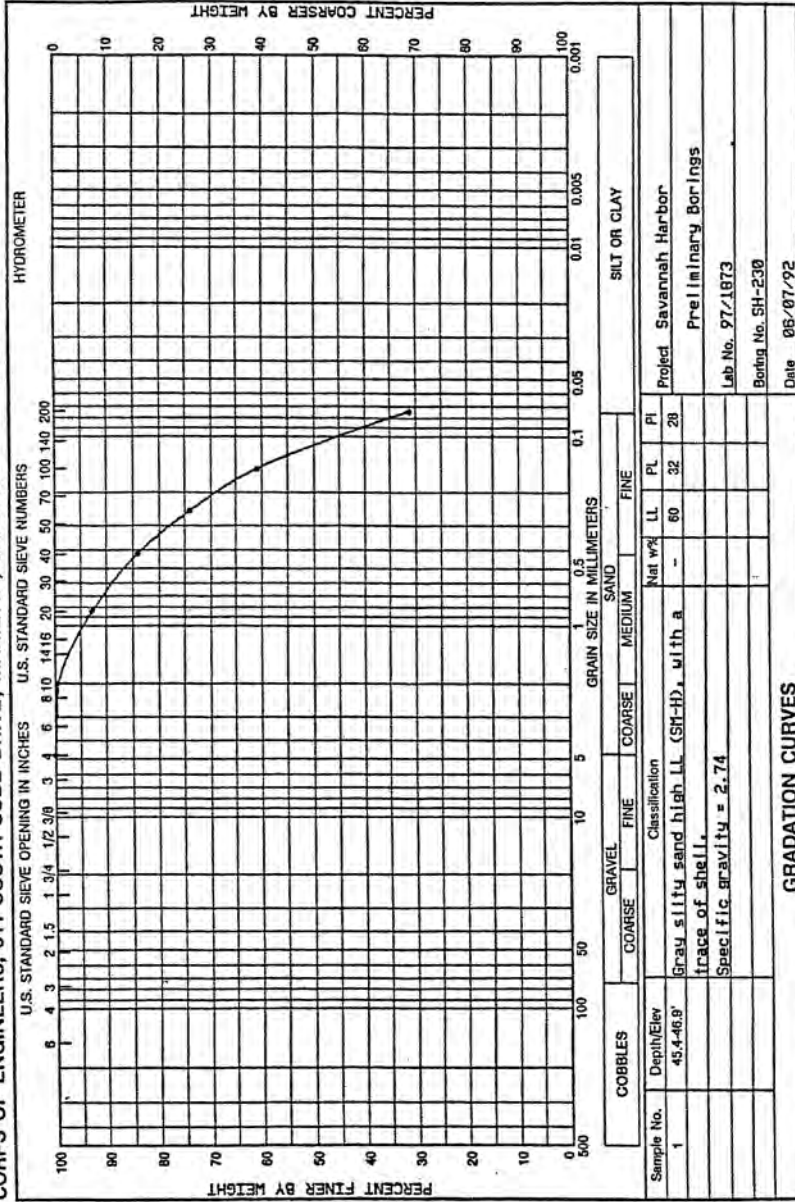
WORK ORDER: 6681  
REQUISITION: EN-65-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



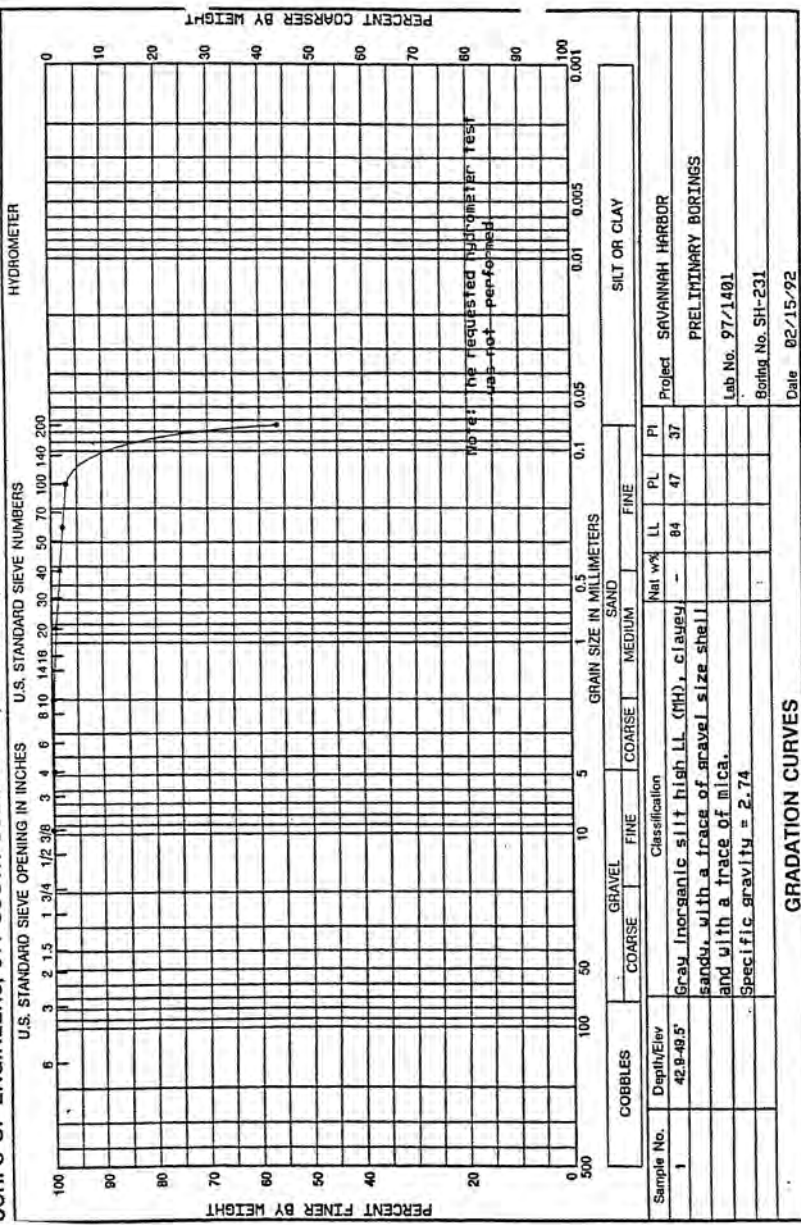


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6501  
REDUCTION: EN-GS-92-54



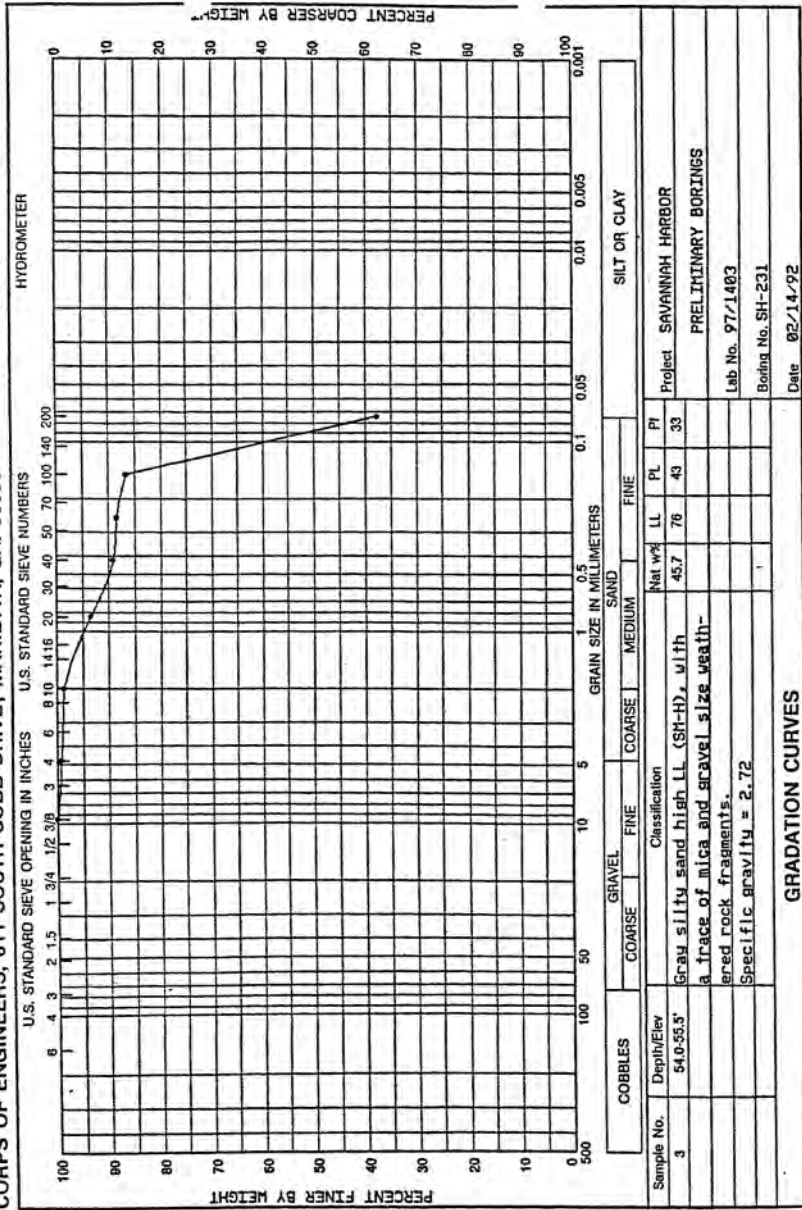
WORK ORDER: 8552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



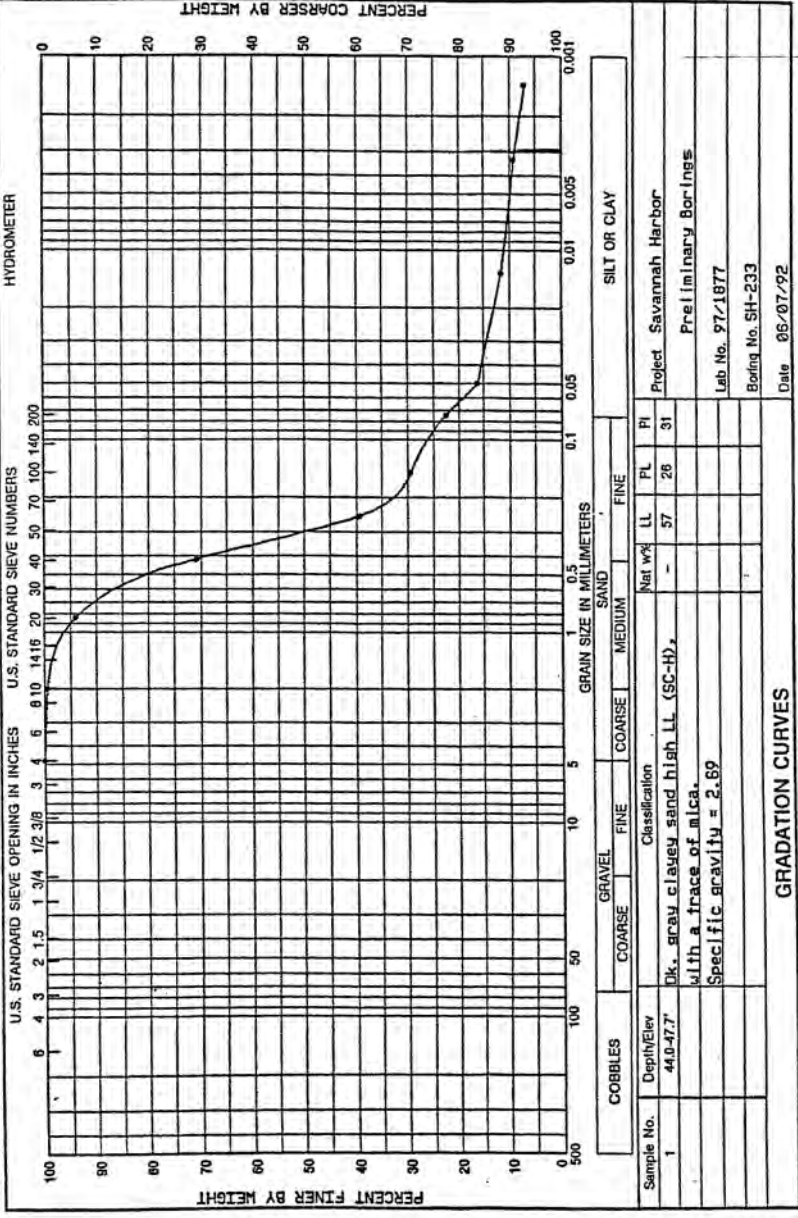
WORK ORDER: 6552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

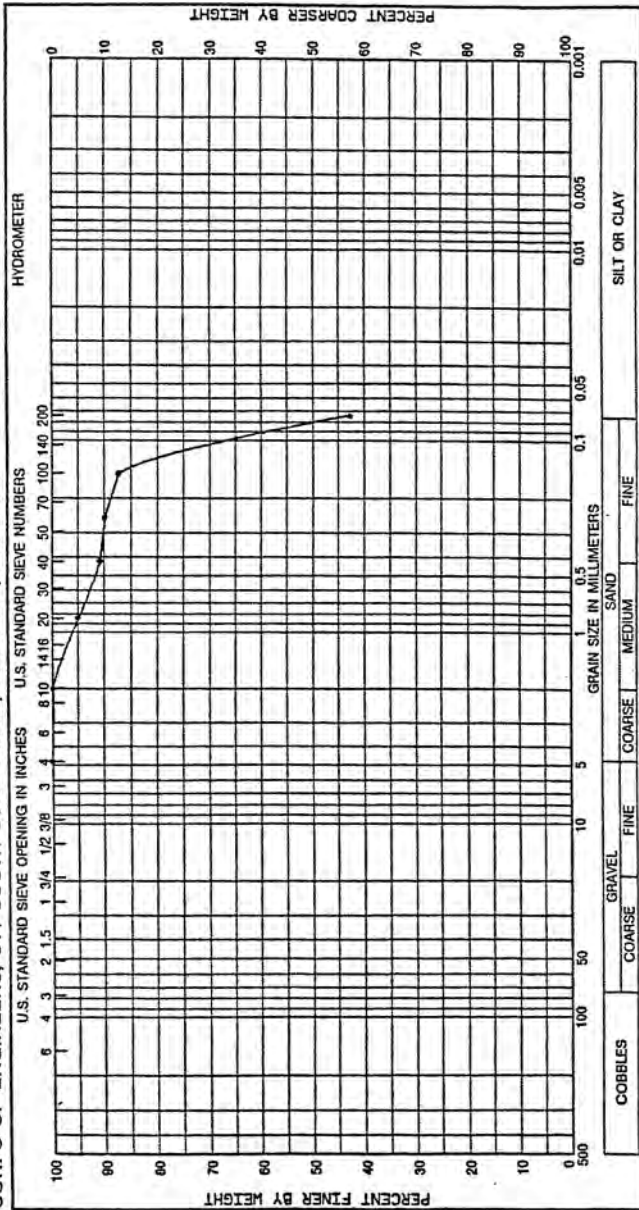


WORK ORDER: 6601  
REQUISITION: EN-66-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6801  
REQUISITION: EN-GG-92-54



| Sample No. | Depth/Elev | Classification                  | Nat Wt | LL | PL | PI | Project | Savannah Harbor     |
|------------|------------|---------------------------------|--------|----|----|----|---------|---------------------|
|            |            |                                 |        |    |    |    |         |                     |
| 3          | 50.7-51.9' | Gray silty sand high LL (SM-H). | -      | 66 | 42 | 24 |         |                     |
|            |            | Specific gravity = 2.76         |        |    |    |    |         | Preliminary Borings |
|            |            |                                 |        |    |    |    |         | Lab No. 97/1879     |
|            |            |                                 |        |    |    |    |         | Boring No. SH-233   |
|            |            |                                 |        |    |    |    |         | Date 06/07/92       |

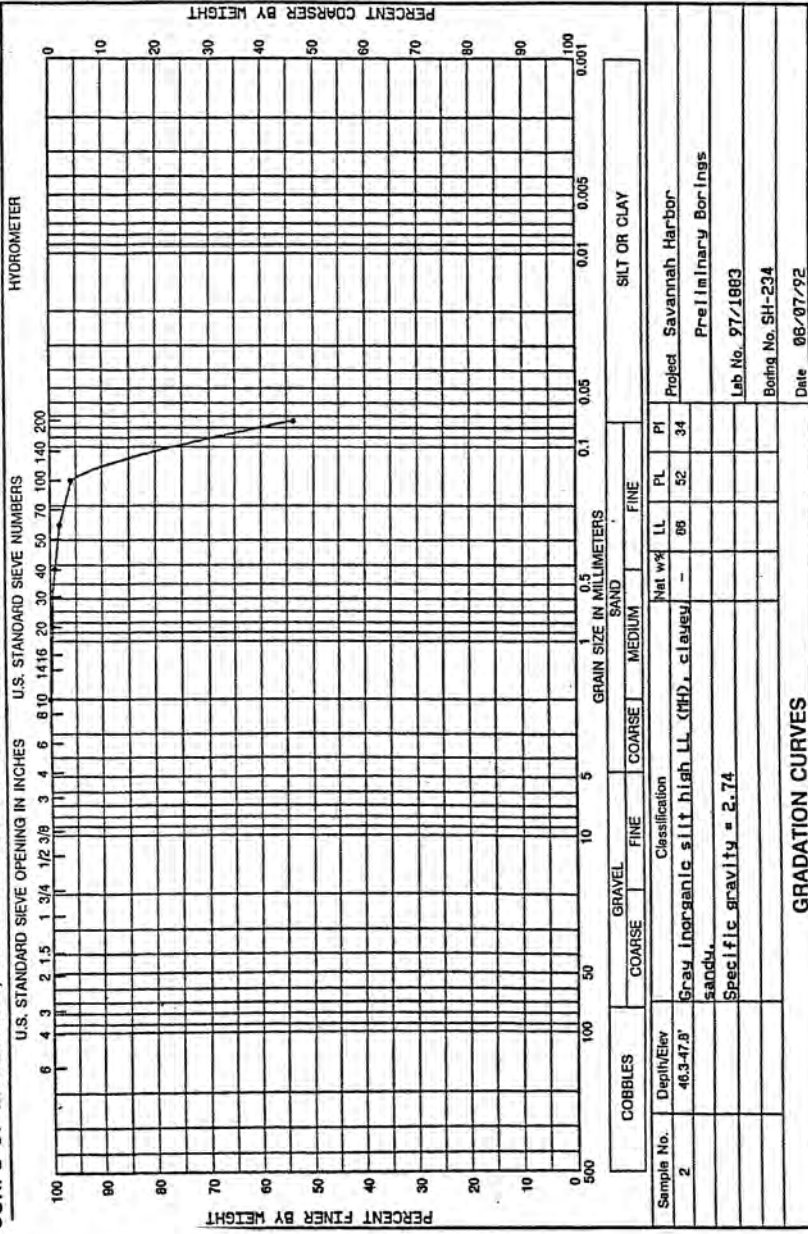
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| GRADATION CURVES |  |  |  |  |  |  |  |  |
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GRADATION CURVES

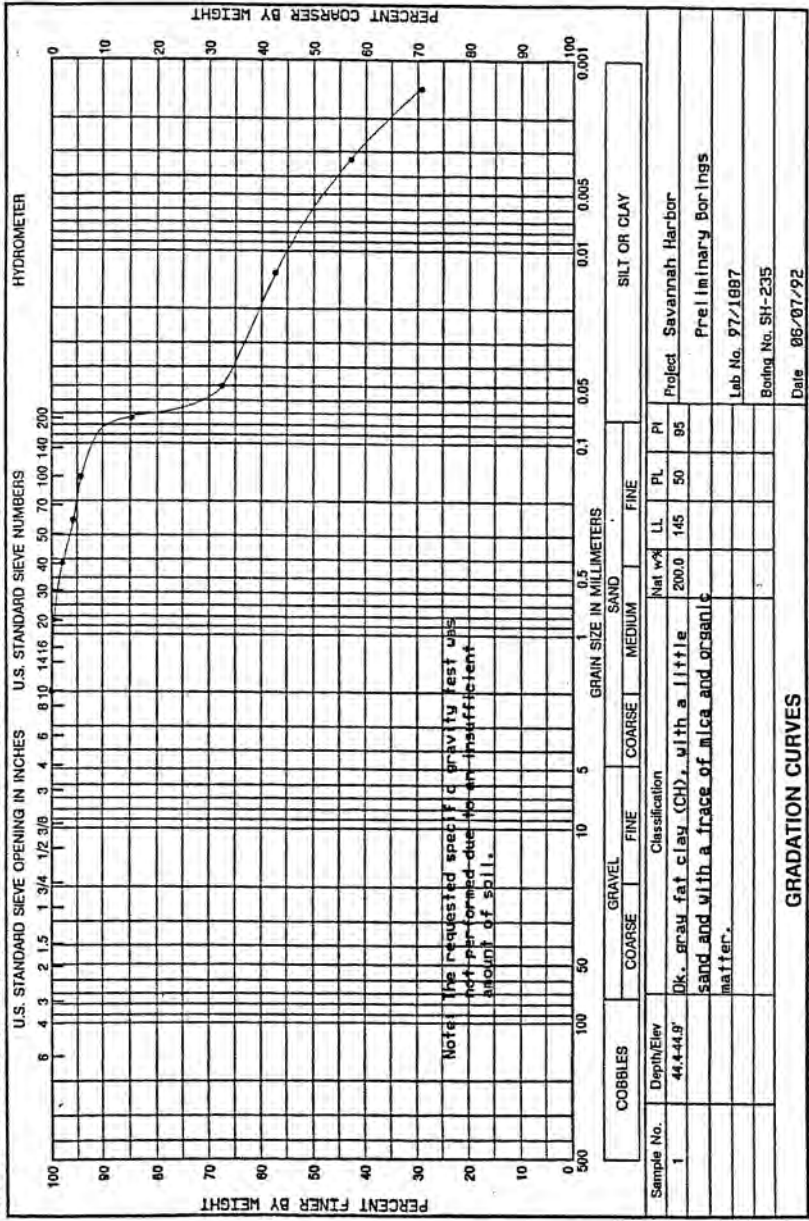


WORK ORDER: 6601  
REQUISITION: EN-GG-92-54

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30050



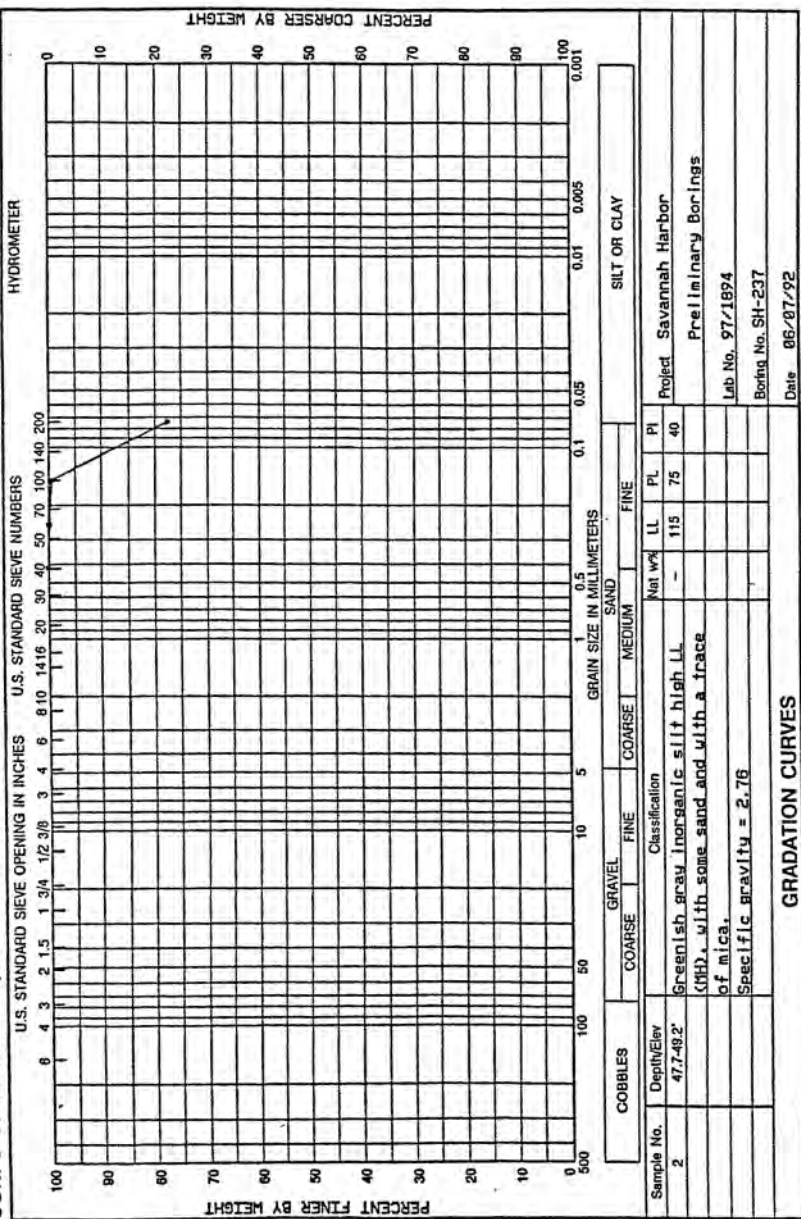
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6801  
REQUISITION: EN-GG-92-54





WORK ORDER: 6601  
REQUISITION: EN-66-92-54

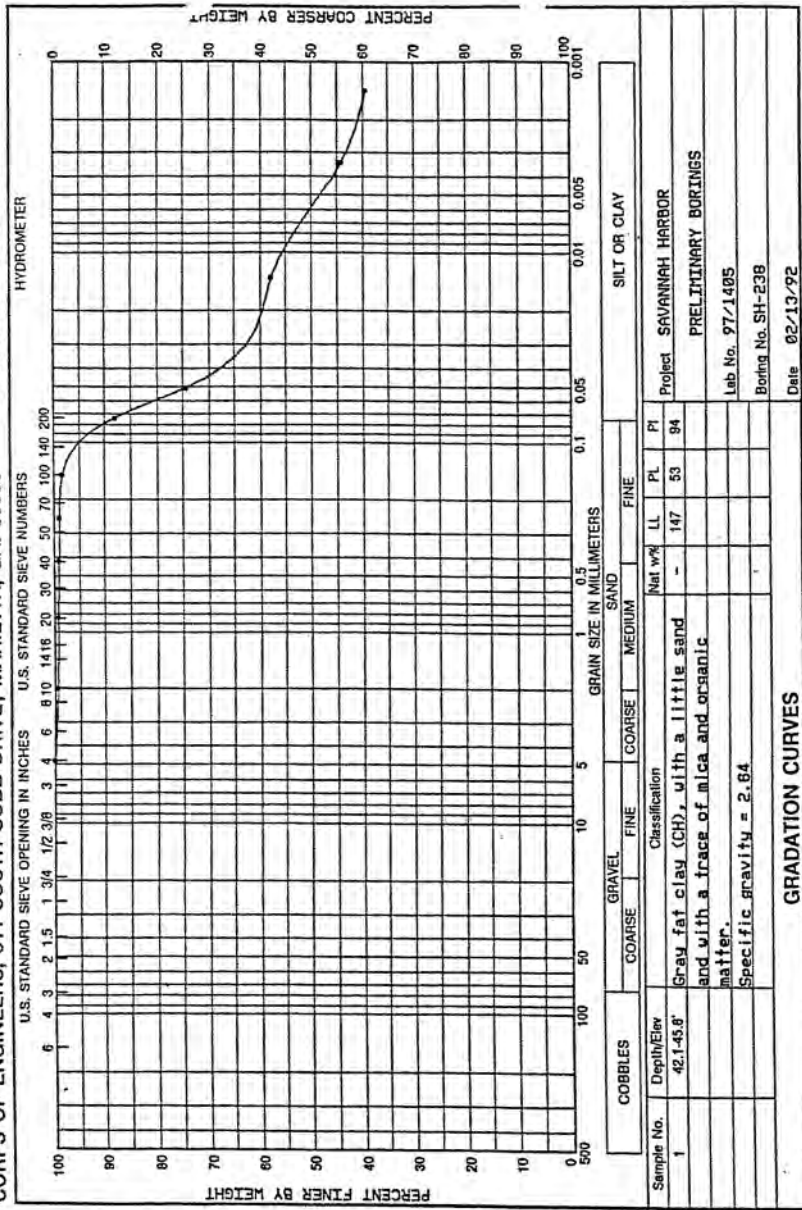
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





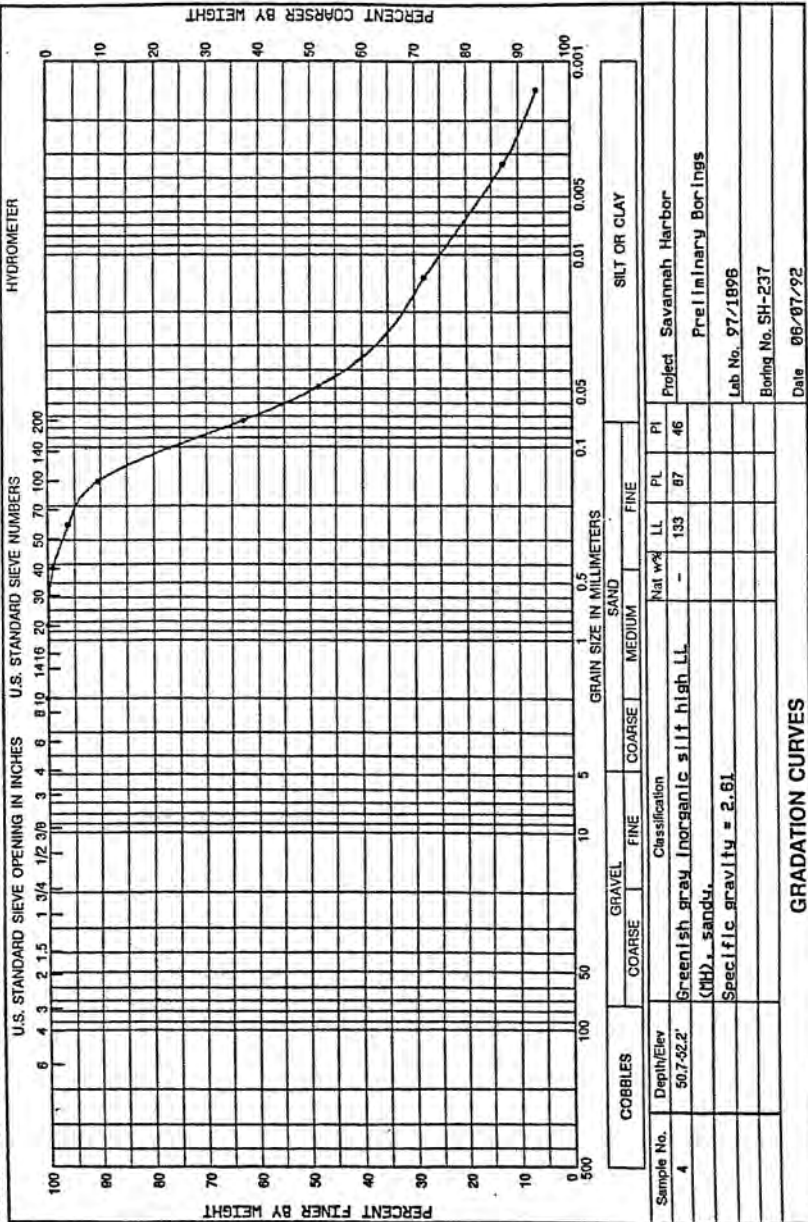
WORK ORDER: 6552  
REQUISITION: EN-69-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



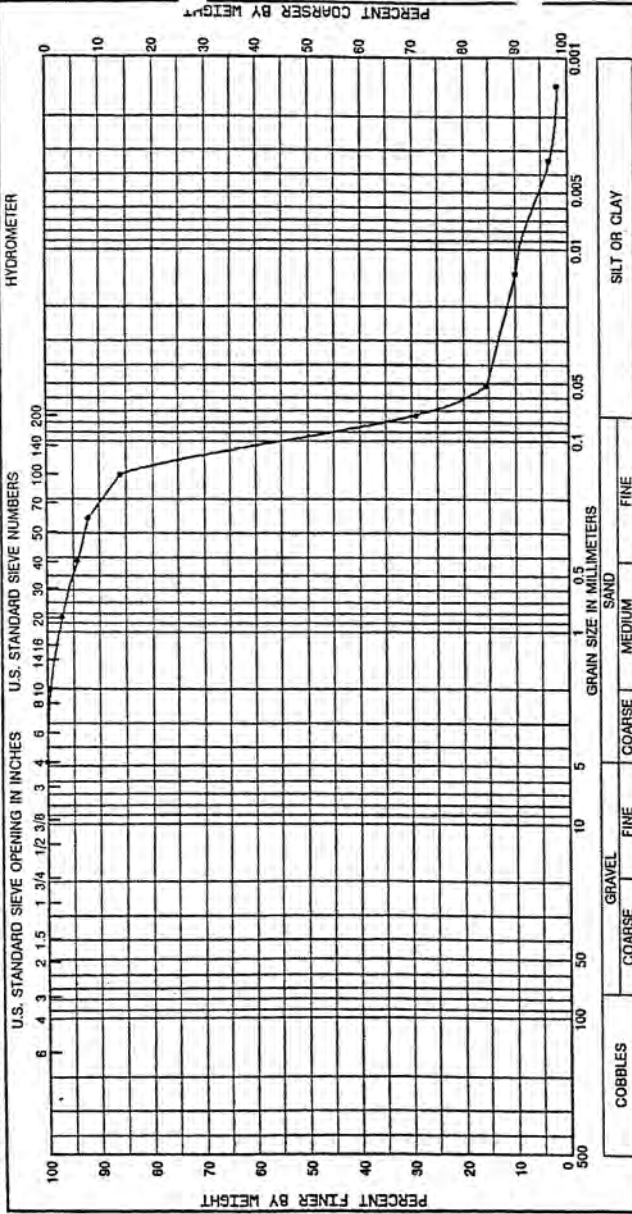
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6601  
REQUISITION: EN-66-92-54



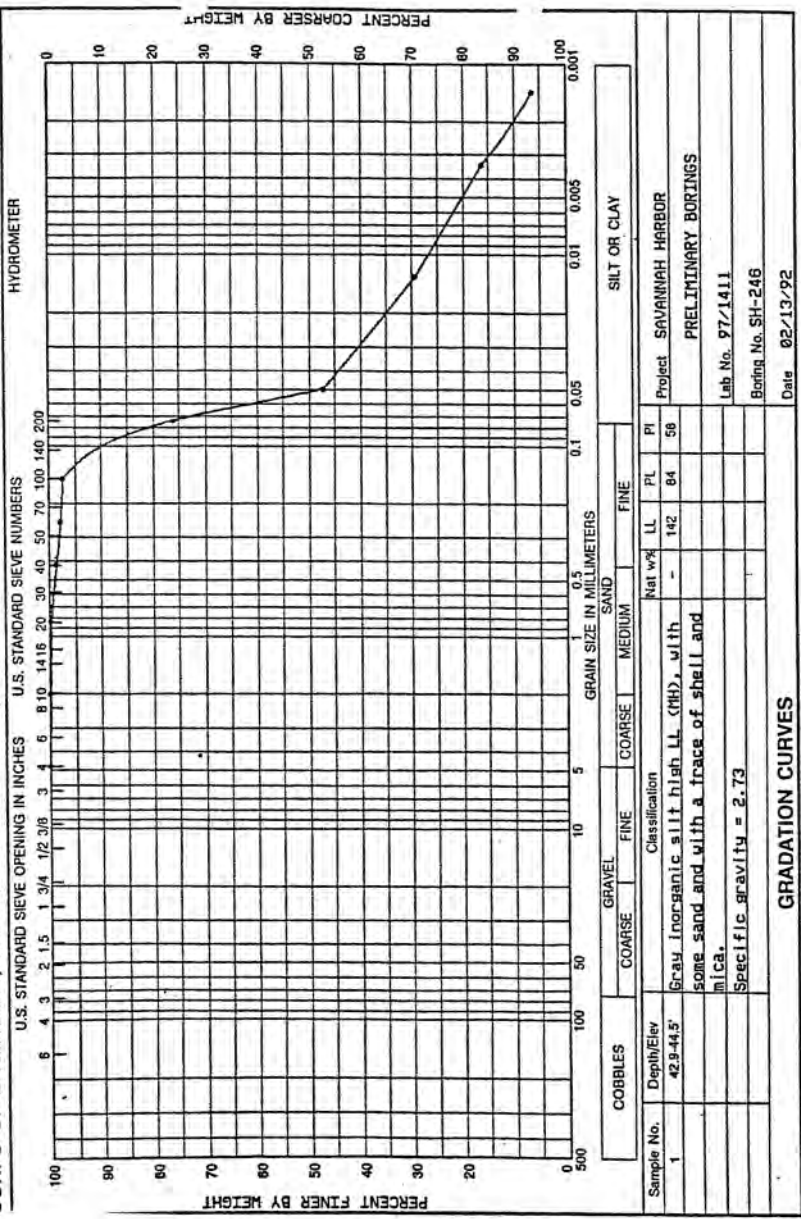
WORK ORDER: 6552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



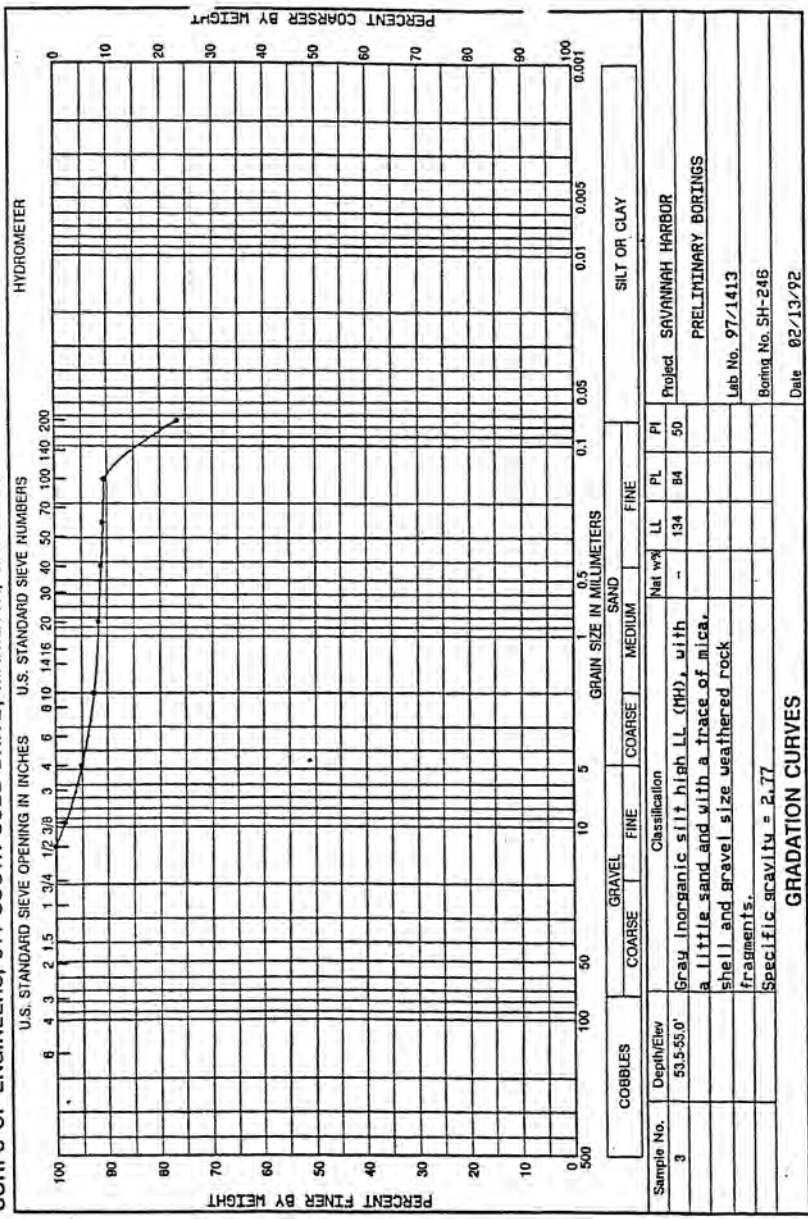
WORK ORDER: 6552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



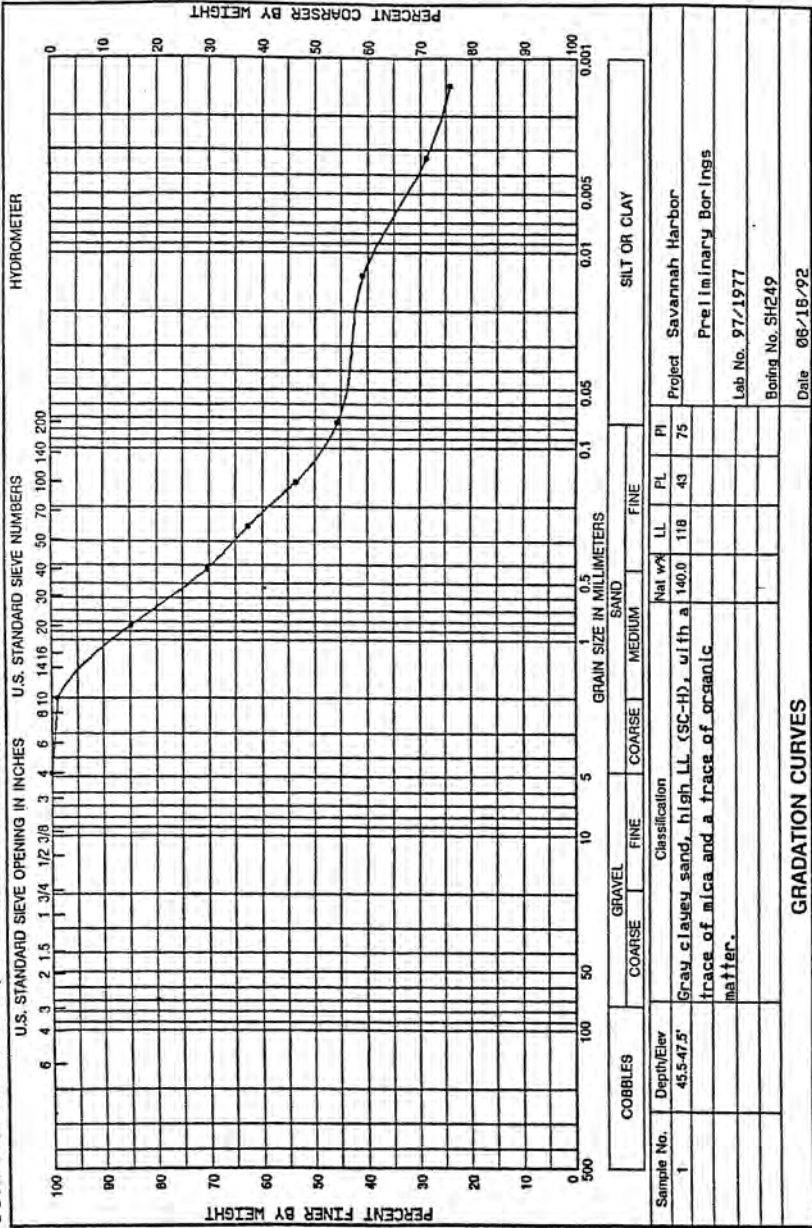
WORK ORDER: 8552  
REQUISITION: EN-66-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



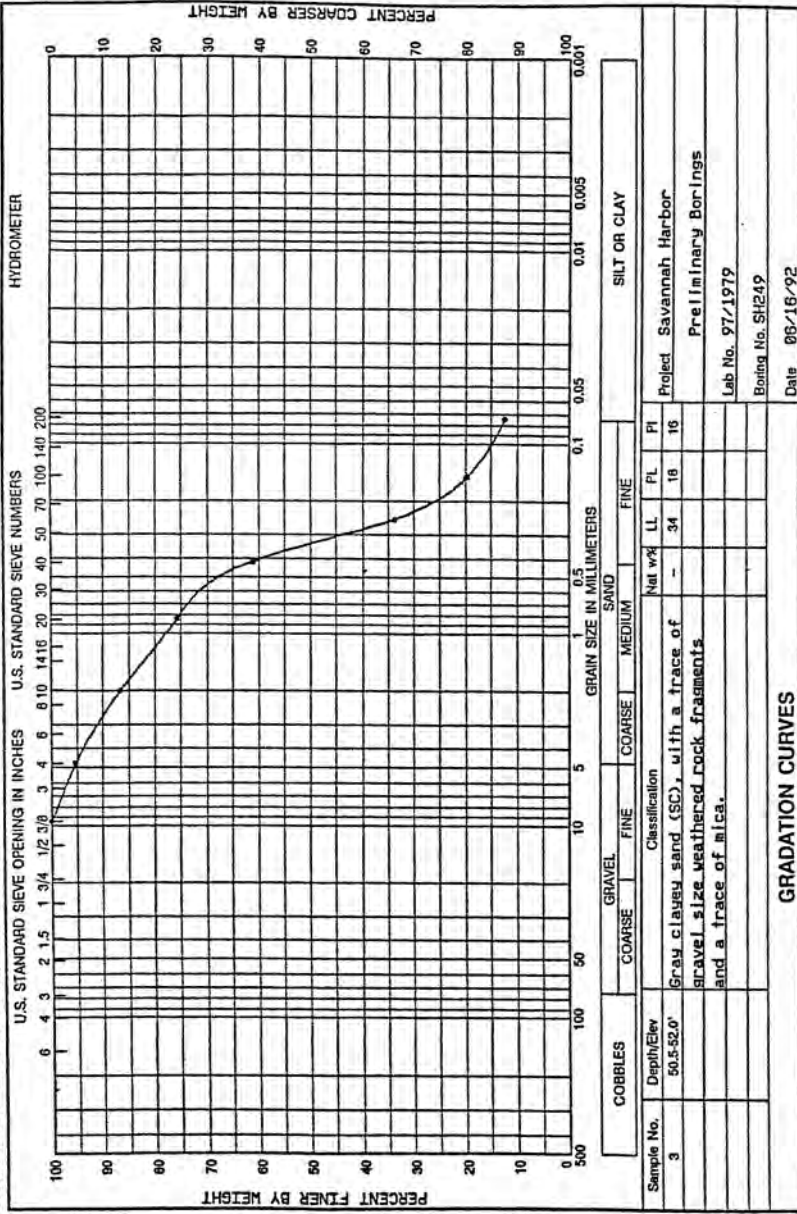
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6667  
REQUISITION: EN-65-92-78



WORK ORDER: 6667  
REQUISITION: EN-66-92-78

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



| COBBLES    |            | GRAVEL                                                                                           |      | SAND   |        |      | SILT OR CLAY |    |    |
|------------|------------|--------------------------------------------------------------------------------------------------|------|--------|--------|------|--------------|----|----|
|            |            | COARSE                                                                                           | FINE | COARSE | MEDIUM | FINE |              |    |    |
| Sample No. | Depth/Elev | Classification                                                                                   |      |        |        |      |              |    |    |
| 3          | 50.5-52.0' | Gray clayey sand (SC), with a trace of gravel size weathered rock fragments and a trace of mica. |      |        |        |      |              |    |    |
|            |            |                                                                                                  |      |        |        |      | Nat wt %     | LL | PL |
|            |            |                                                                                                  |      |        |        |      | -            | 34 | 18 |
|            |            |                                                                                                  |      |        |        |      |              |    | 10 |
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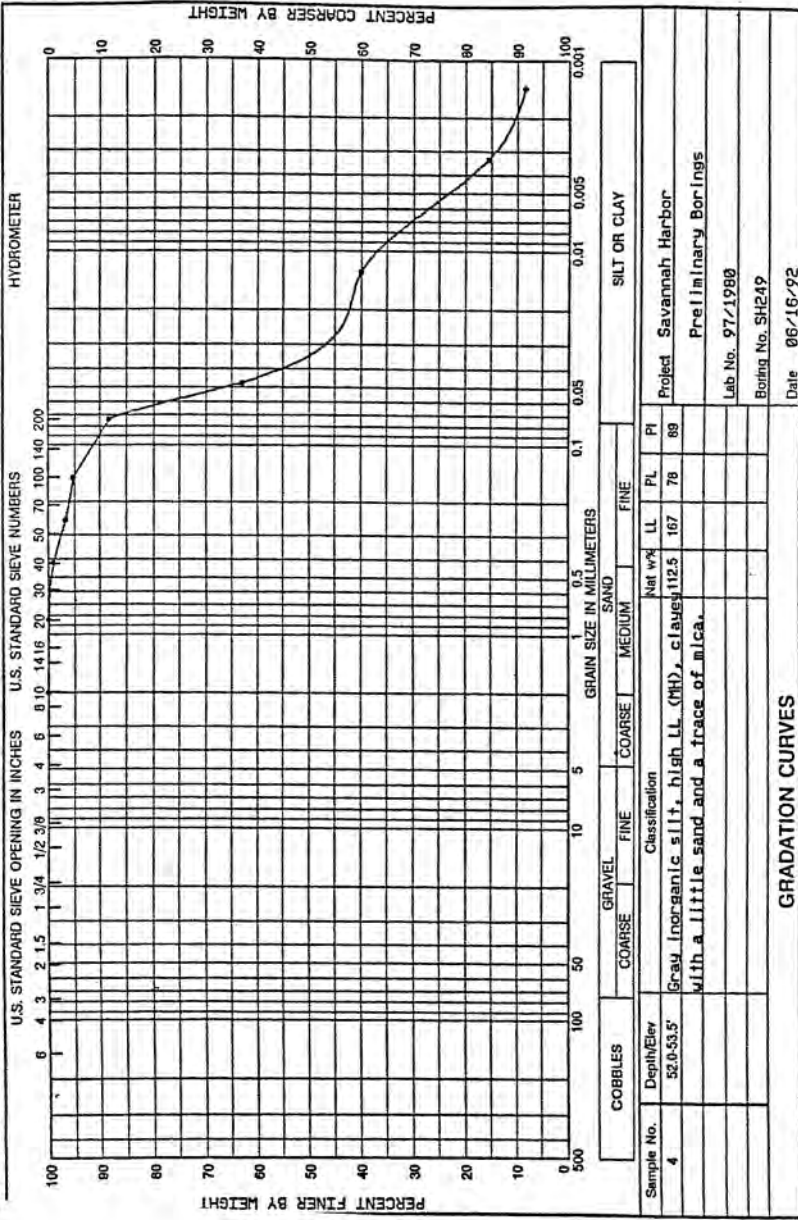
## GRADATION CURVES





WORK ORDER: 6667  
REQUISITION: EN-GG-92-78

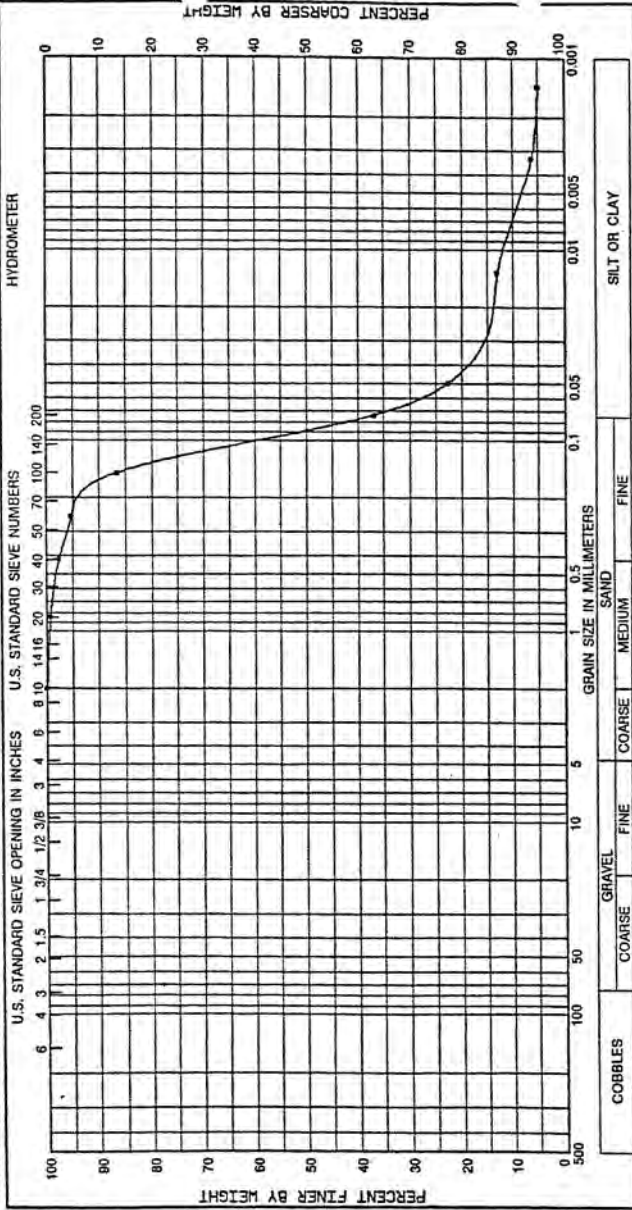
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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-66-92-25

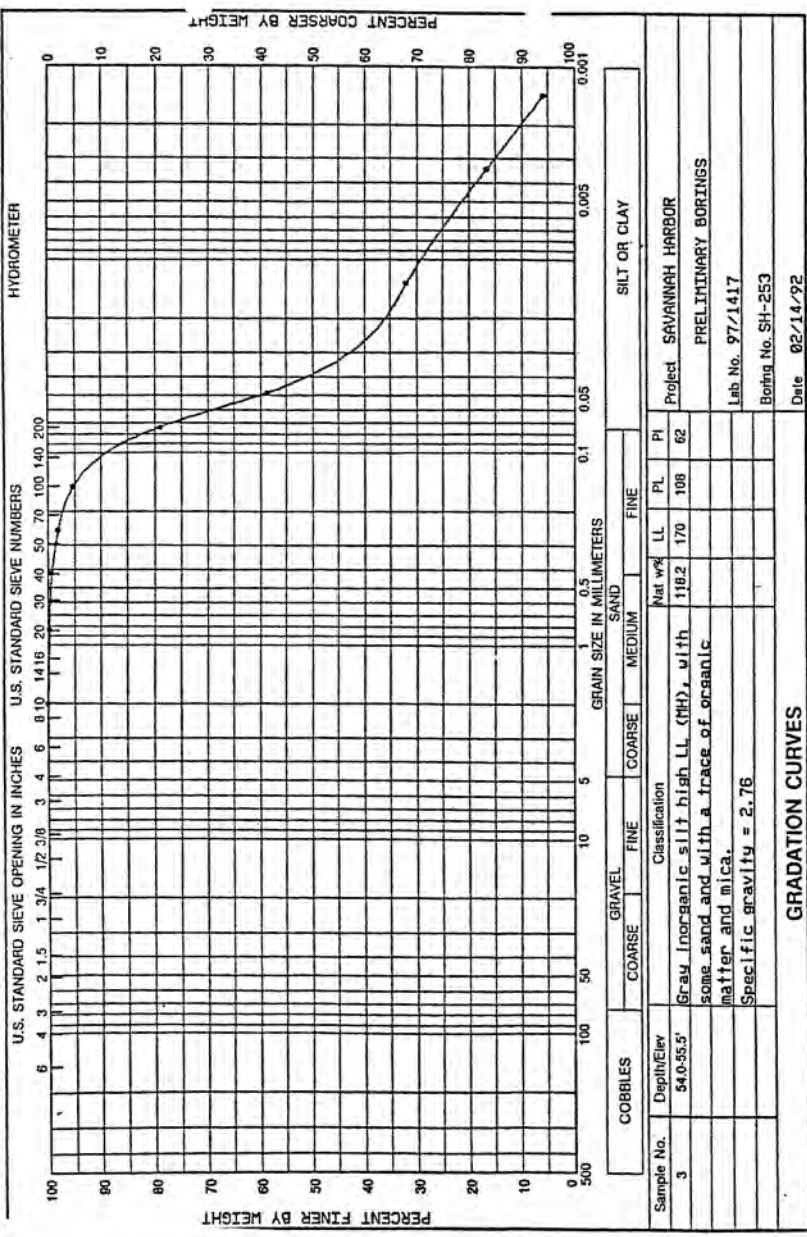


GRADATION CURVES



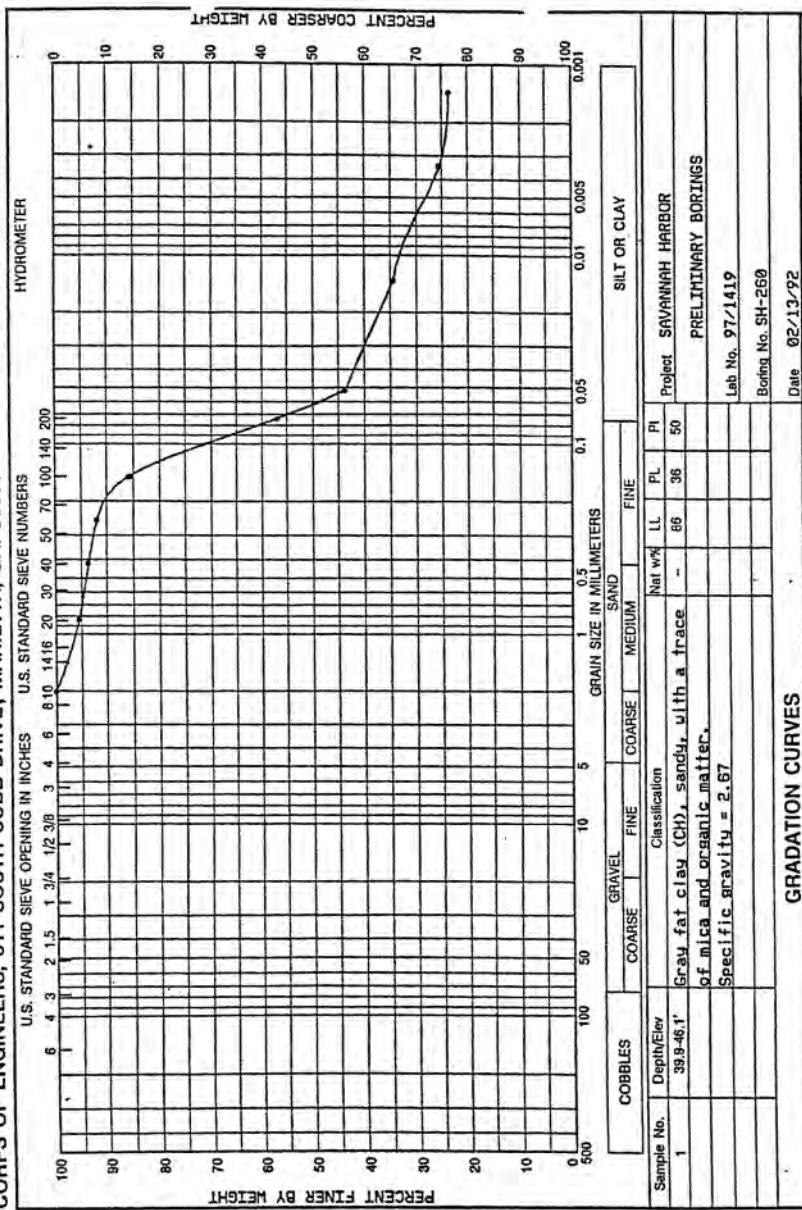
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-66-92-25



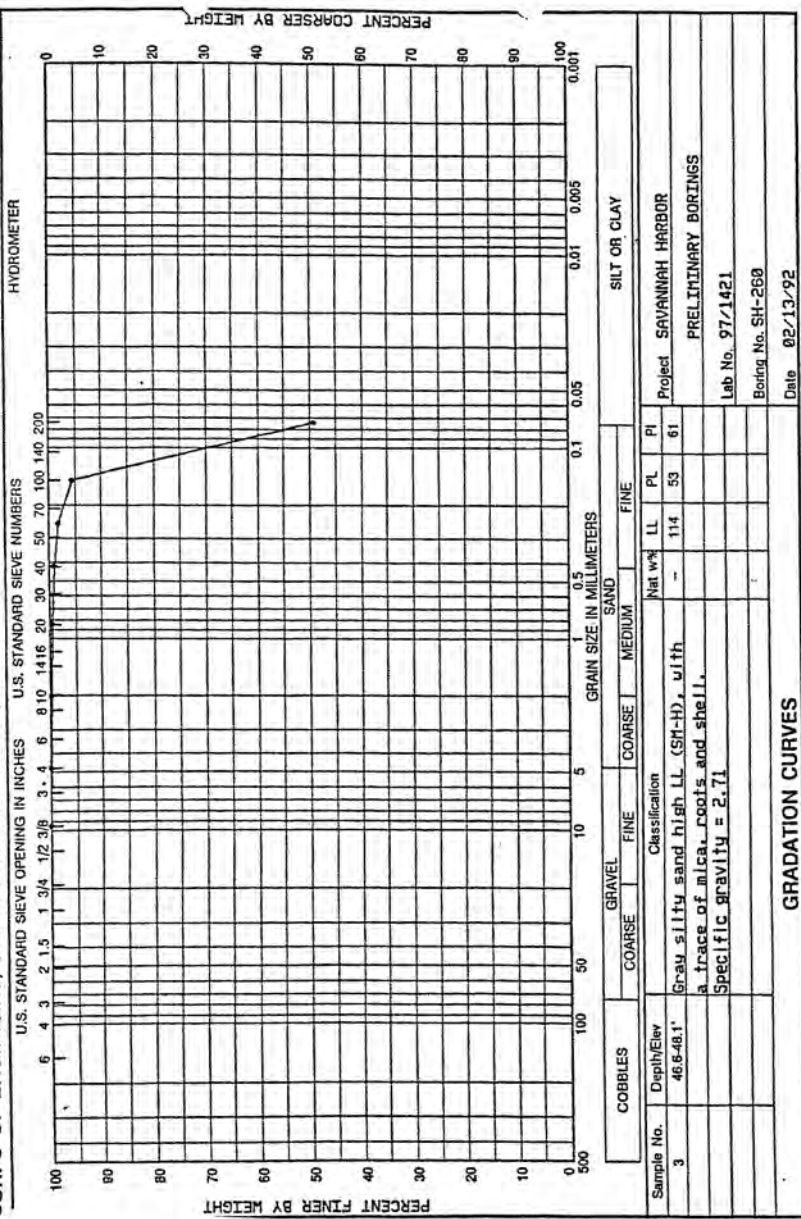
WORK ORDER: 8552  
REQUISITION: EN-GG-92-25

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CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



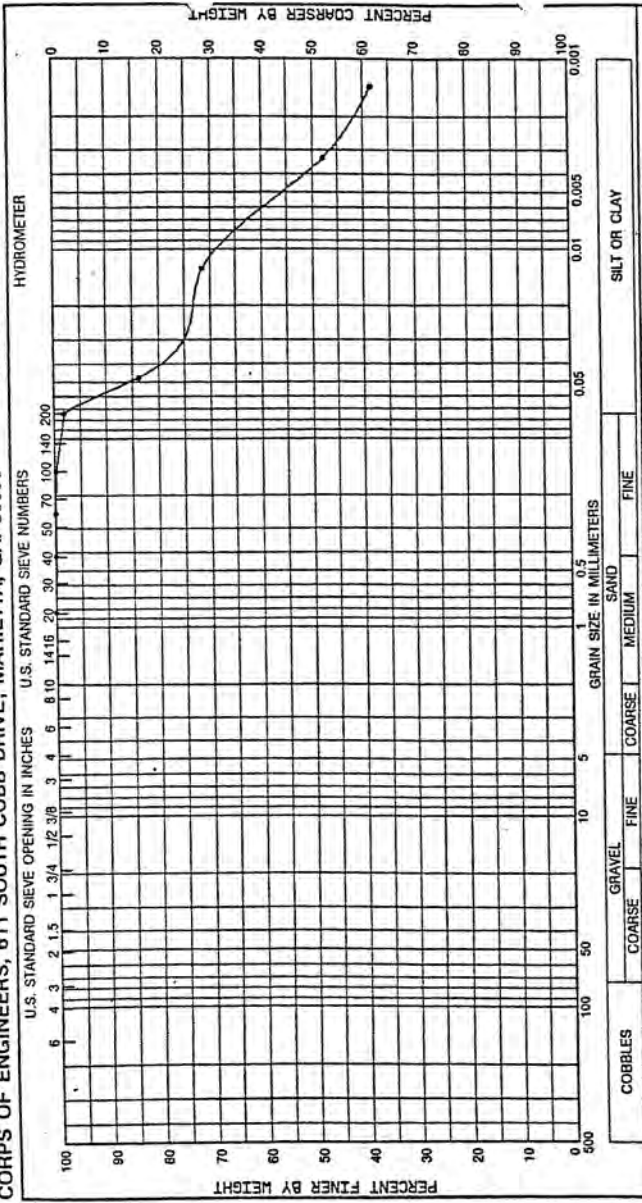
WORK ORDER: 6552  
REQUISITION: EN-66-92-25

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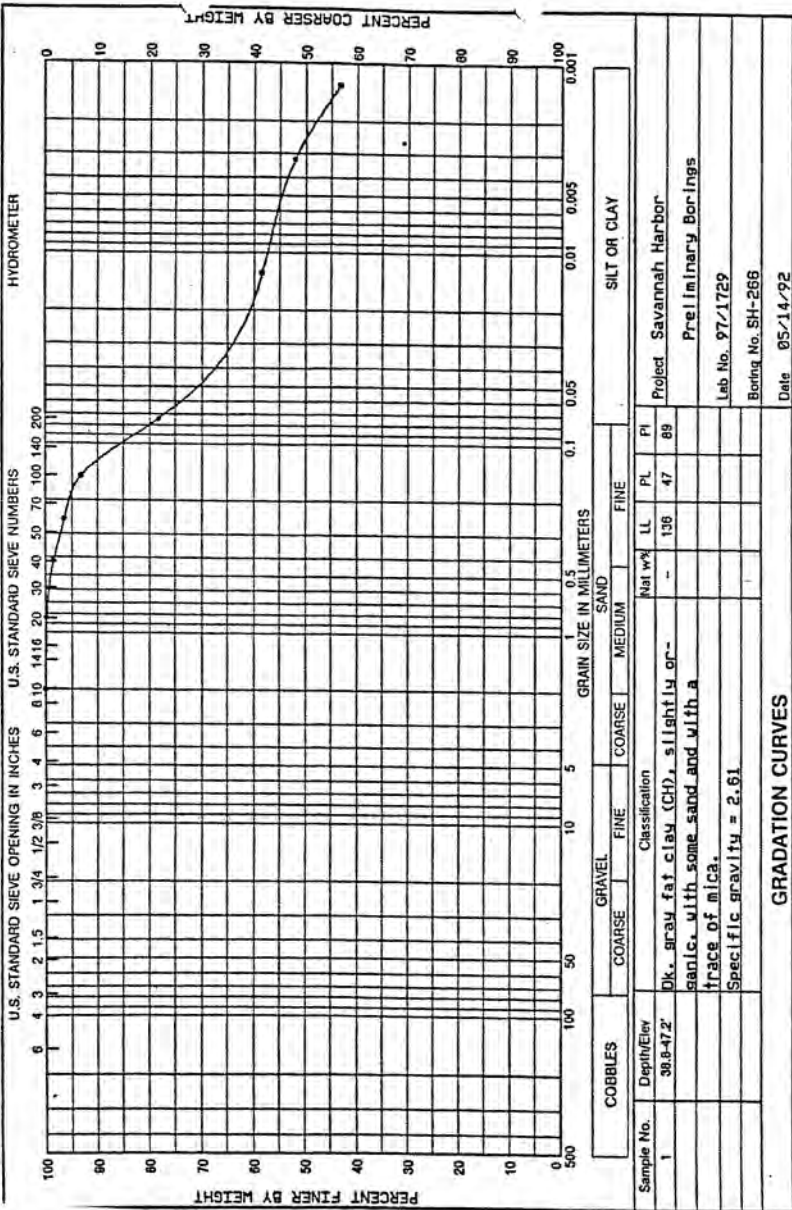
WORK ORDER: 6552  
REQUISITION: EN-GG-92-25



| COBBLES    |            | GRAVEL                                                                  |  | SAND   |  | FINE |  | SILT OR CLAY |  |
|------------|------------|-------------------------------------------------------------------------|--|--------|--|------|--|--------------|--|
| COARSE     |            | FINE                                                                    |  | MEDIUM |  | PL   |  | PI           |  |
| Sample No. | Depth/Elev | Classification                                                          |  | Nat w% |  | LL   |  | PL           |  |
| 6          | 57.1-58.6' | Gray inorganic silt high LL (MH), clayey with a trace of sand and mica. |  | -      |  | 173  |  | 81           |  |
|            |            | Specific gravity = 2.60                                                 |  |        |  |      |  |              |  |
|            |            |                                                                         |  |        |  |      |  |              |  |
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DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 8660  
REQUISITION: EN-66-92-53





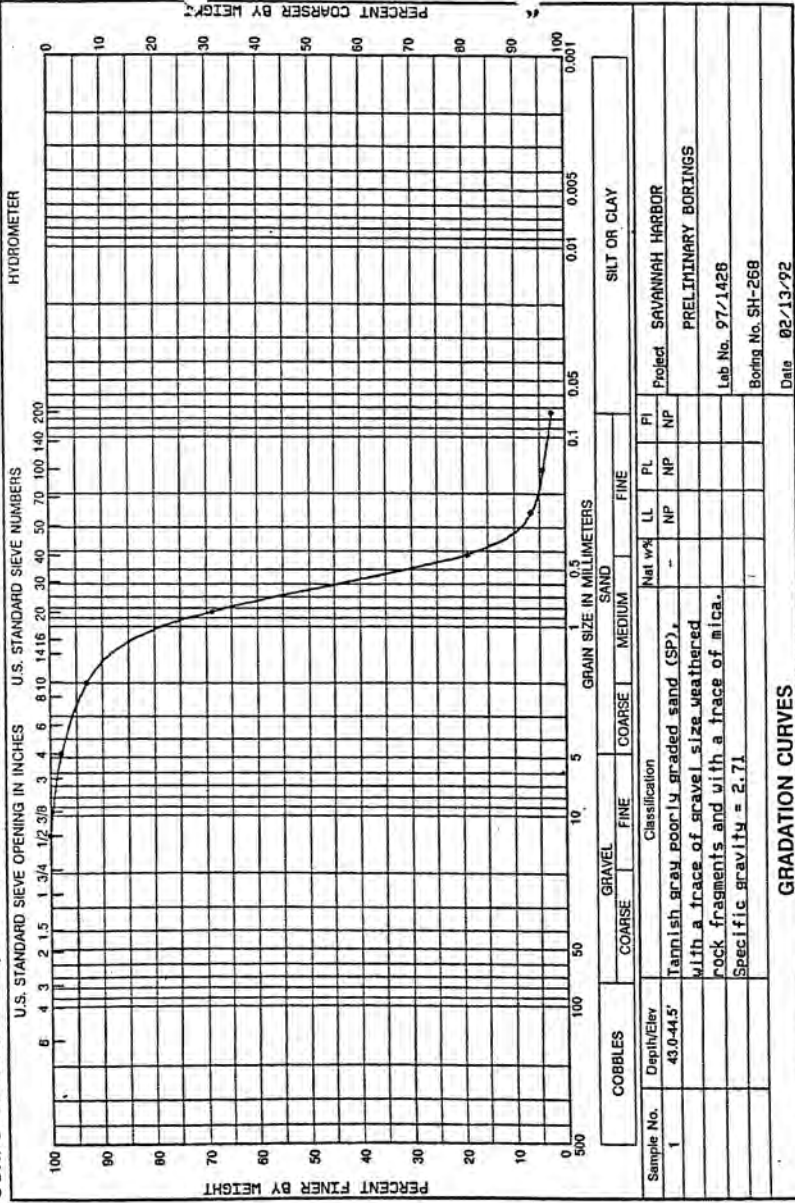






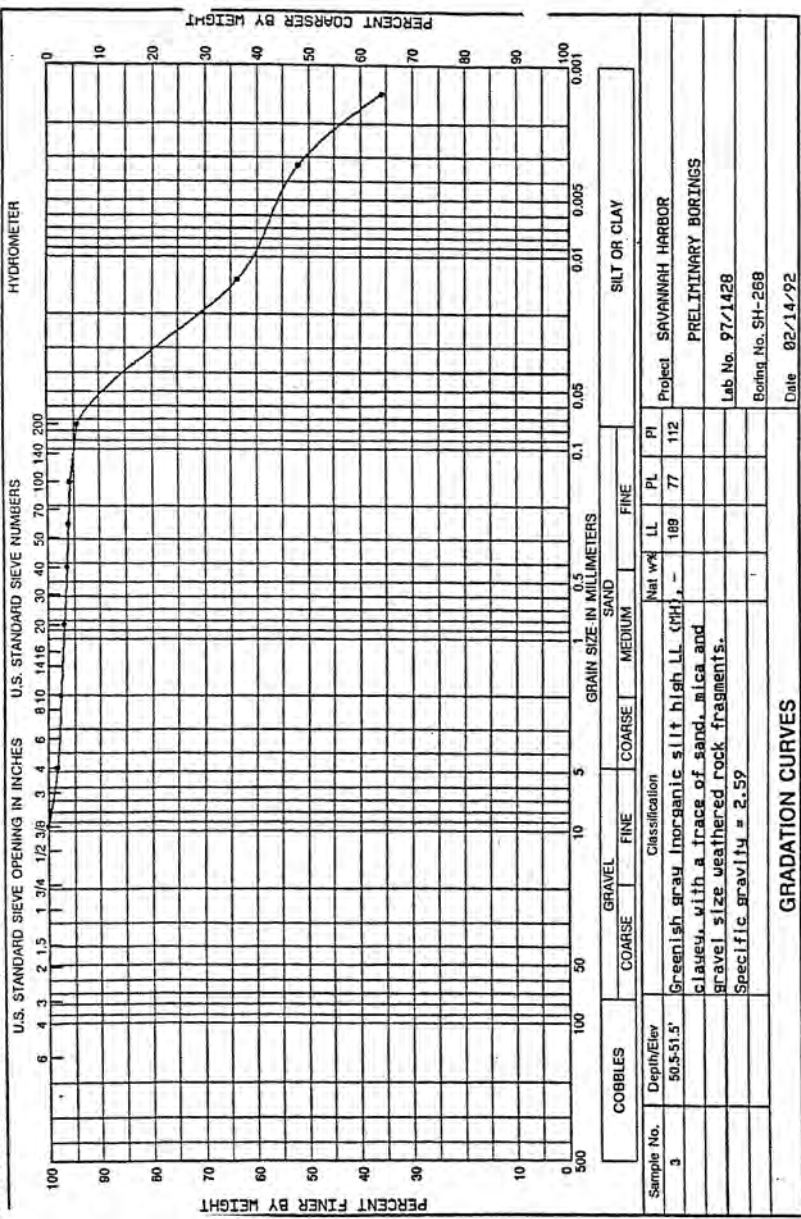
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

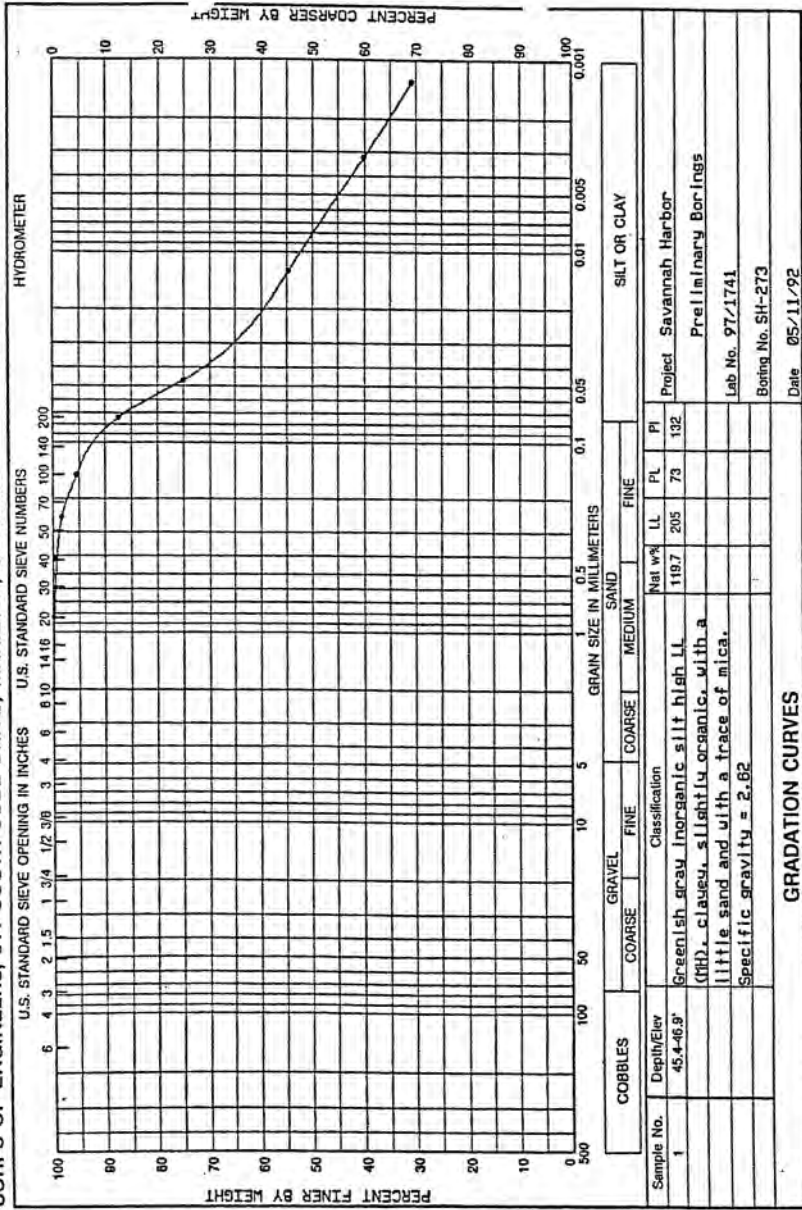


WORK ORDER: 6552  
REQUISITION: EN-66-72-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

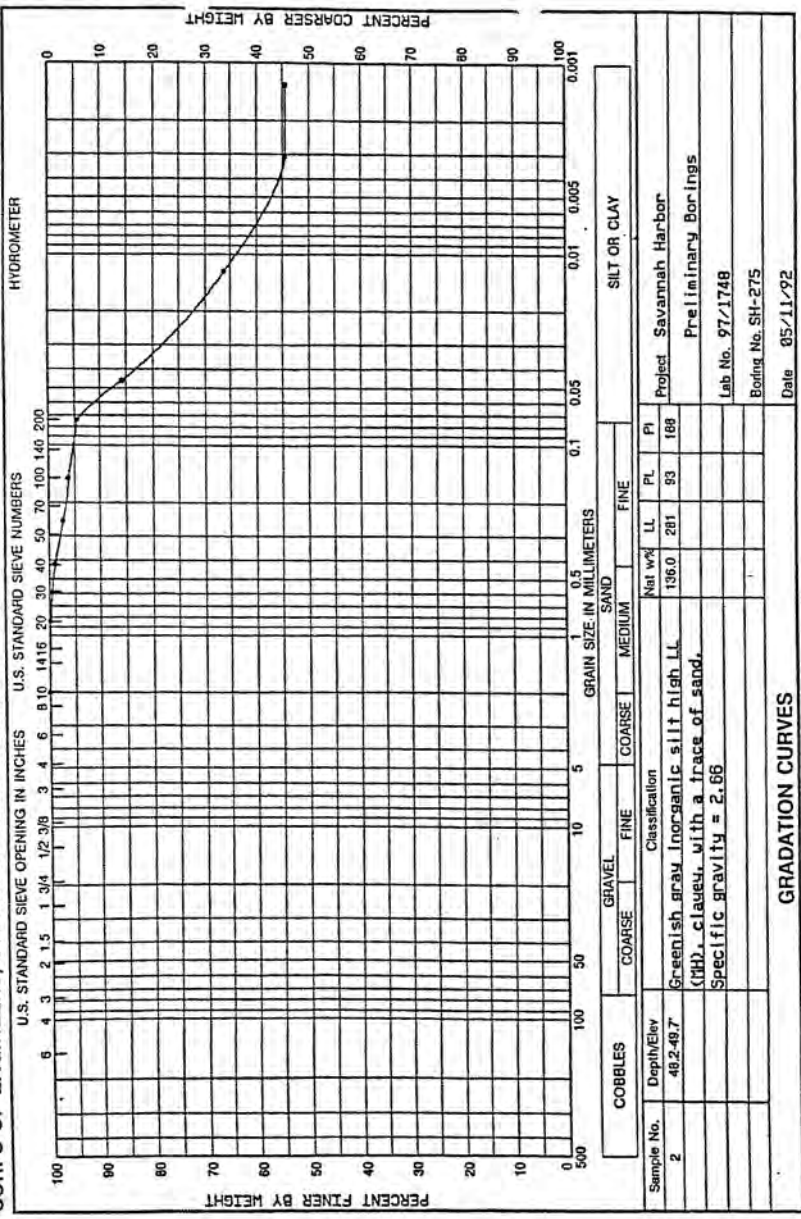


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 6500  
REQUISITION: EN-GG-92-53



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

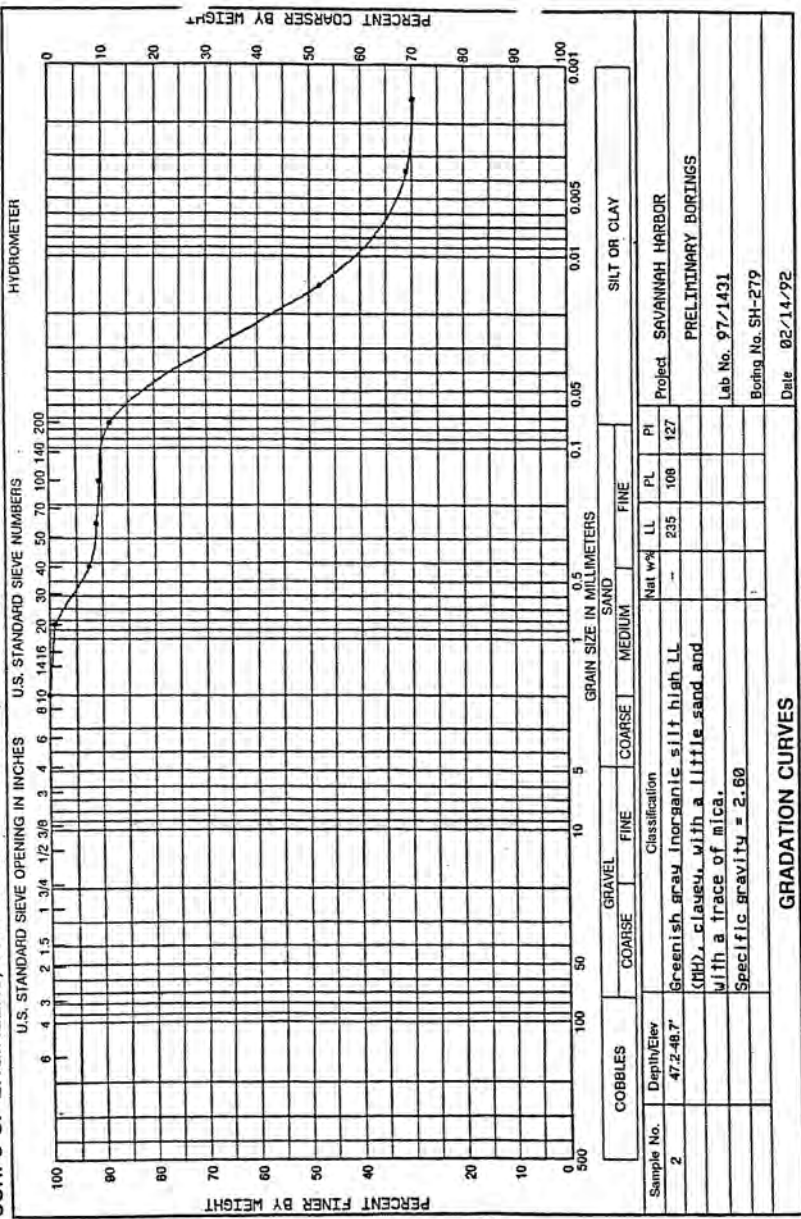
WORK ORDER: 6600  
 REQUISITION: EN-66-92-53





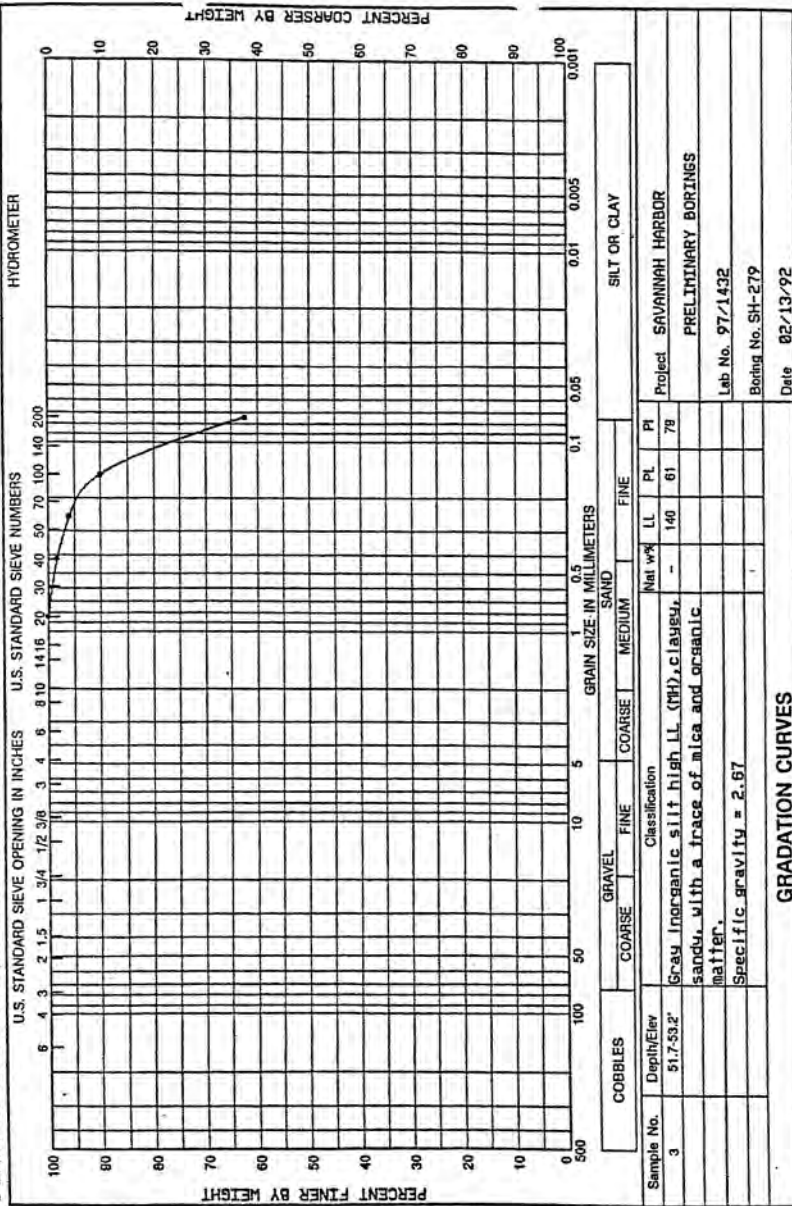
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6552  
 REQUISITION: EN-GG-92-25



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

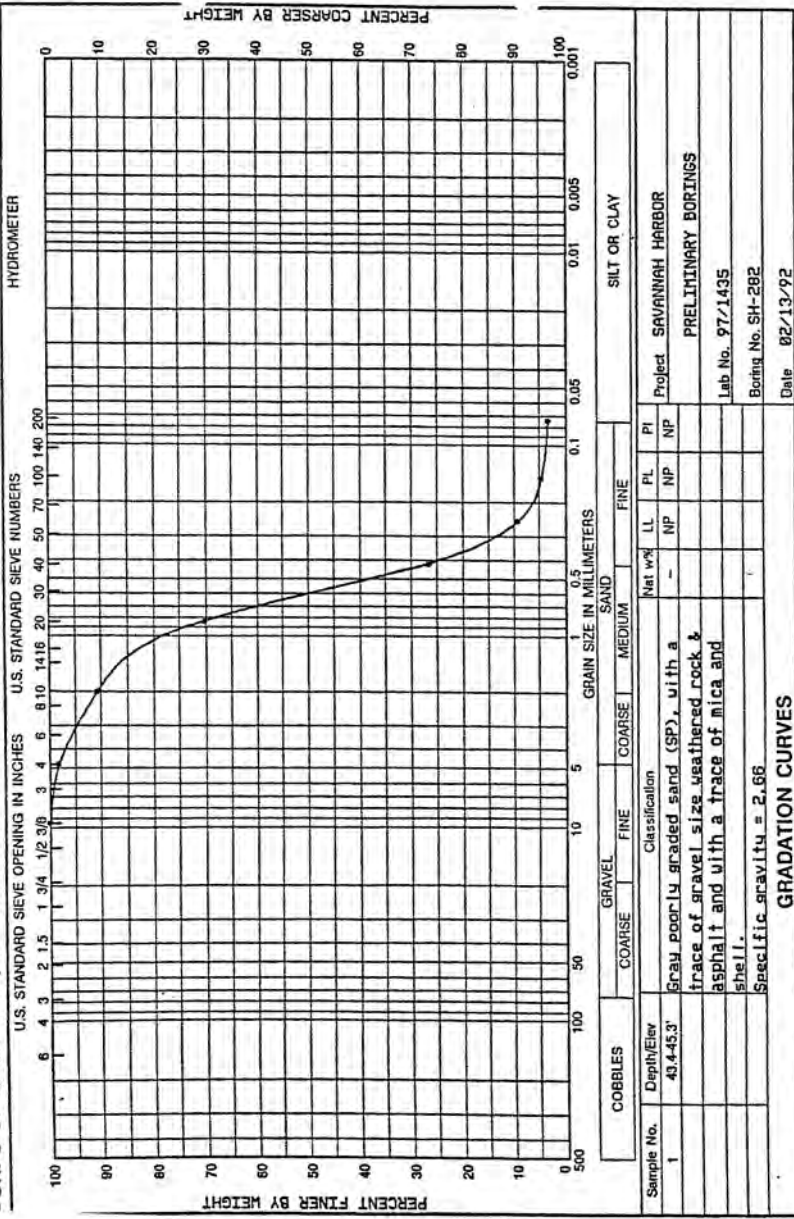
WORK ORDER: 6552  
REQUISITION: EN-GG-92-25





WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



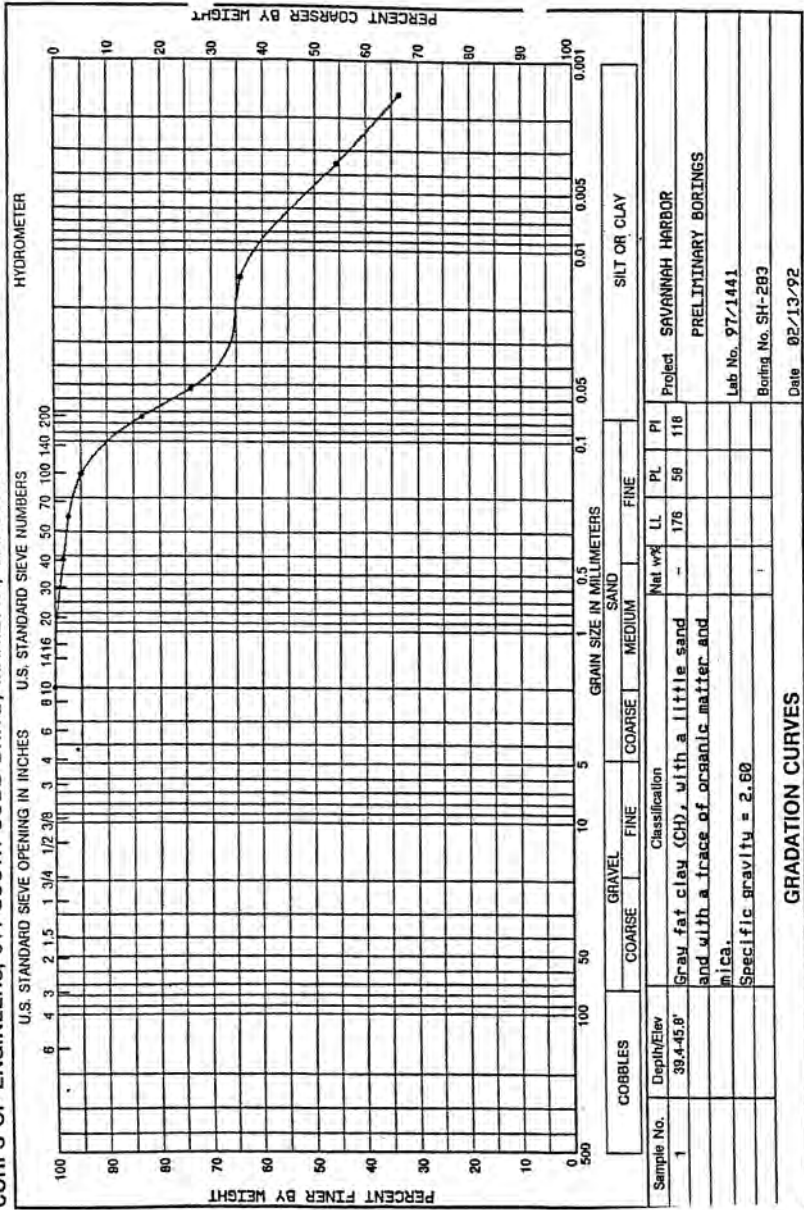






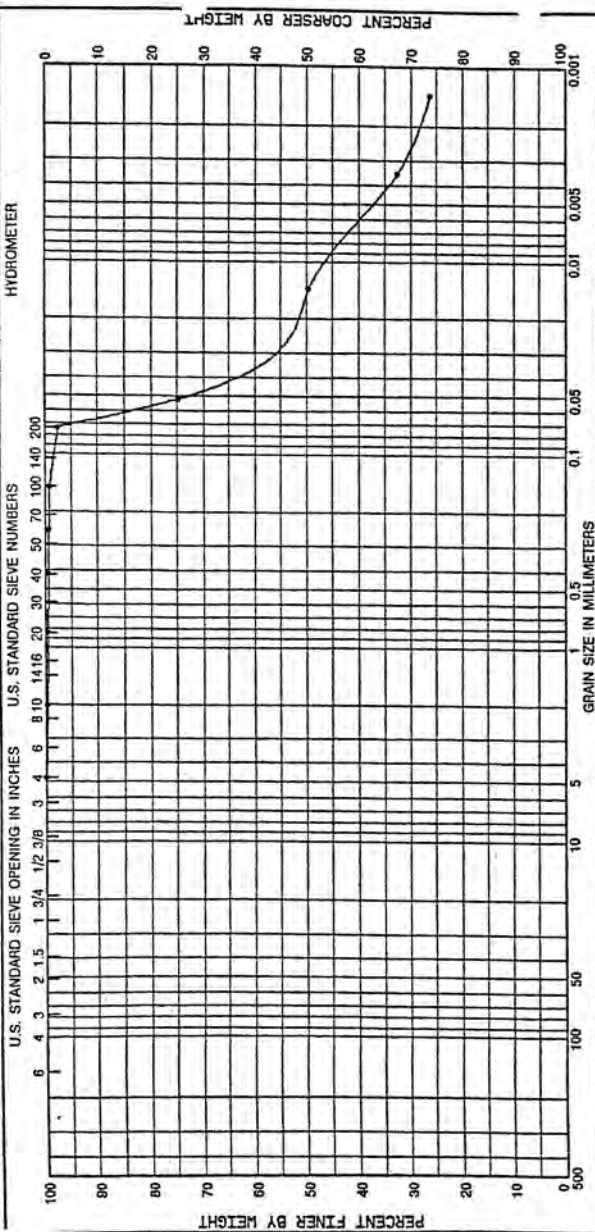
WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

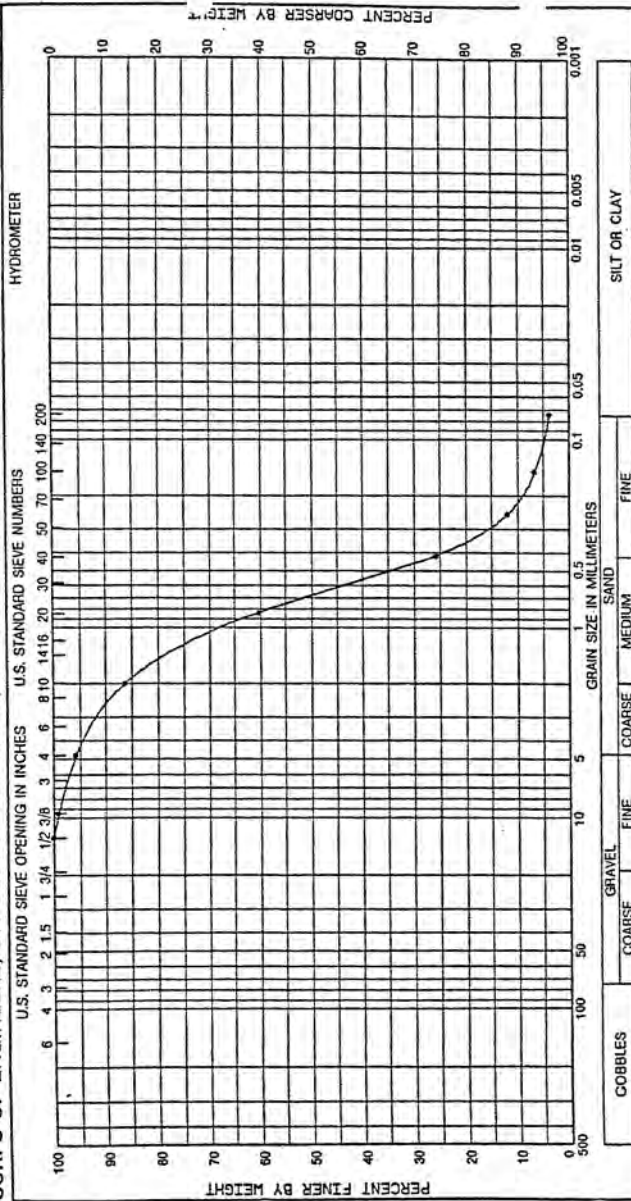
WORK ORDER: 6552  
REQUISITION: EN-65-92-25



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6585

REQUISITION: EN-GG-92-37



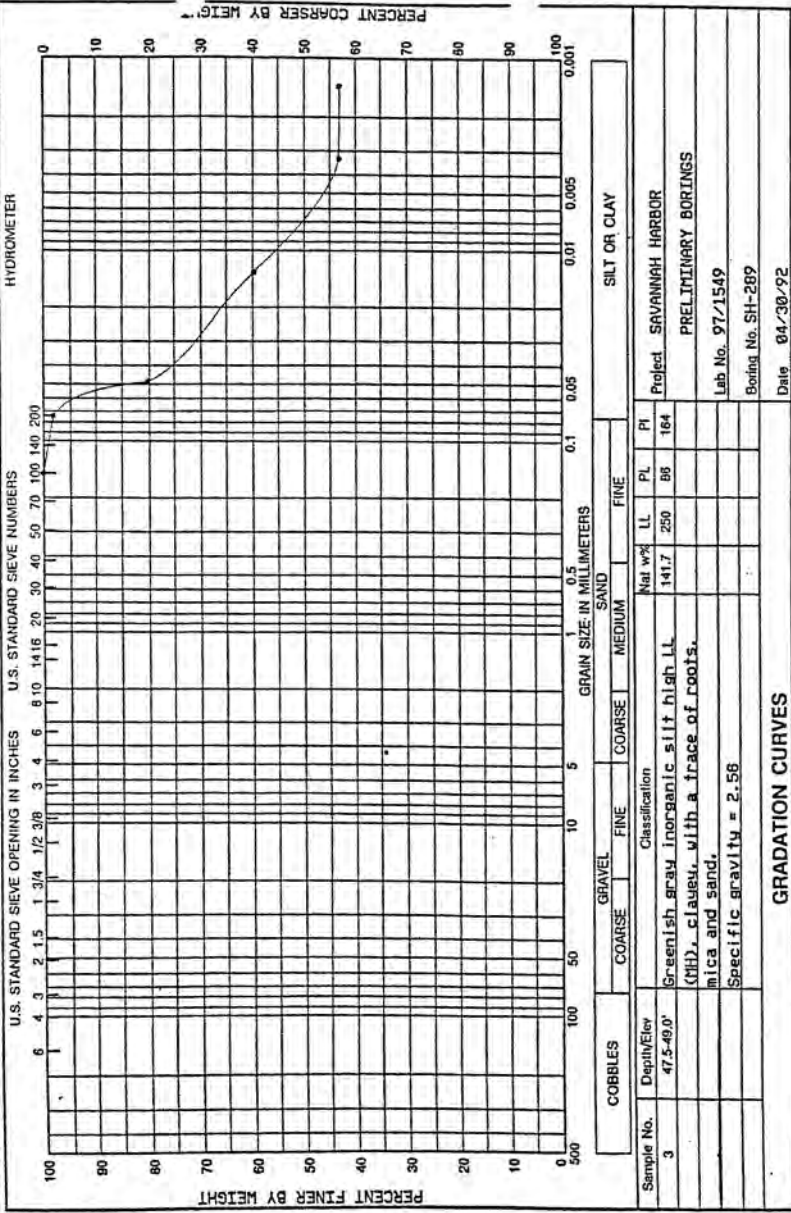
|            |   |            |            |                |                                                                                                    |        |   |    |    |    |    |    |   |         |                     |
|------------|---|------------|------------|----------------|----------------------------------------------------------------------------------------------------|--------|---|----|----|----|----|----|---|---------|---------------------|
| Sample No. | 1 | Depth/Elev | 40.0-43.0' | Classification | Gray poorly graded sand (SP), with a trace of gravel size quartz & shell and with a trace of mica. | Net wt | - | LL | 24 | PL | 21 | PI | 3 | Project | SAVANNAH HARBOR     |
|            |   |            |            |                | Specific gravity = 2.68                                                                            |        |   |    |    |    |    |    |   |         | PRELIMINARY BORINGS |
|            |   |            |            |                |                                                                                                    |        |   |    |    |    |    |    |   |         | Lab No. 97/1547     |
|            |   |            |            |                |                                                                                                    |        |   |    |    |    |    |    |   |         | Boring No. SH-289   |
|            |   |            |            |                |                                                                                                    |        |   |    |    |    |    |    |   |         | Date 04/28/92       |

GRADATION CURVES



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6585  
REQUISITION: EN-GG-92-37

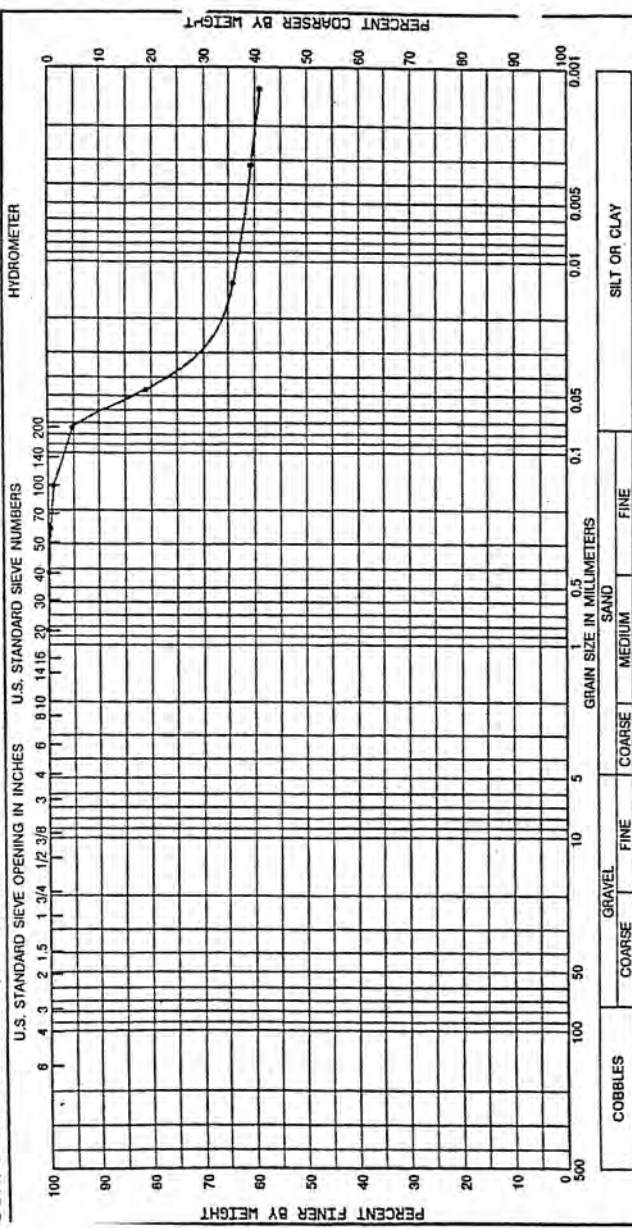






WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

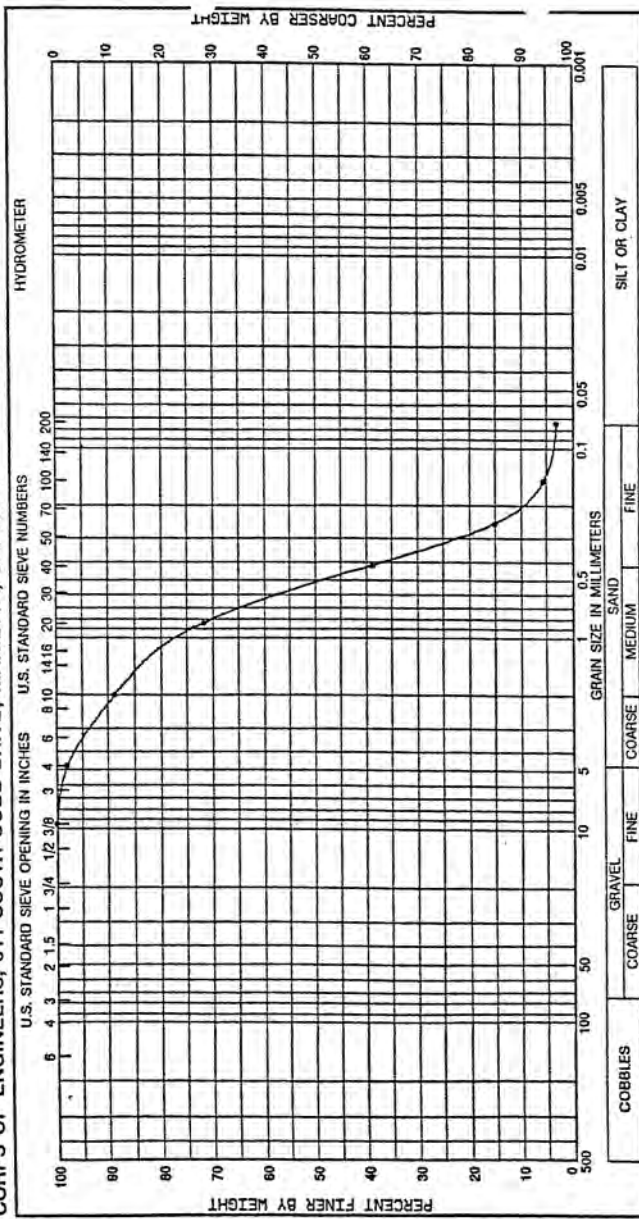


| Sample No.       | Depth/Elev | GRAVEL |        | FINE   |        | SAND   |        | SILT OR CLAY |        | Project         | PRELIMINARY BORINGS | Lab No. | Boring No. | Date     |
|------------------|------------|--------|--------|--------|--------|--------|--------|--------------|--------|-----------------|---------------------|---------|------------|----------|
|                  |            | COARSE | COARSE | COARSE | COARSE | COARSE | COARSE | COARSE       | COARSE |                 |                     |         |            |          |
| 3                | 46.5-48.0' |        |        |        |        |        |        |              |        | SAVANNAH HARBOR |                     | 97/144B | SH-291     | 02/13/92 |
| GRADATION CURVES |            |        |        |        |        |        |        |              |        |                 |                     |         |            |          |



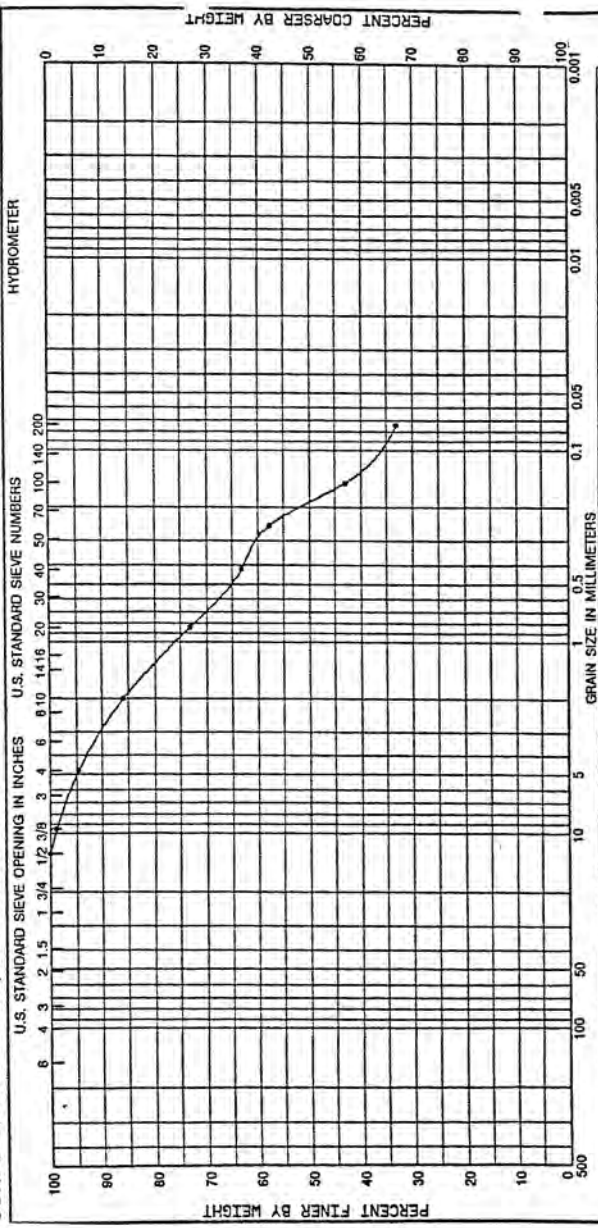


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
 WORK ORDER: 6580  
 REQUISITION: EN-GG-92-53



WORK ORDER: 6500  
REDUSSION: EN-68-22-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

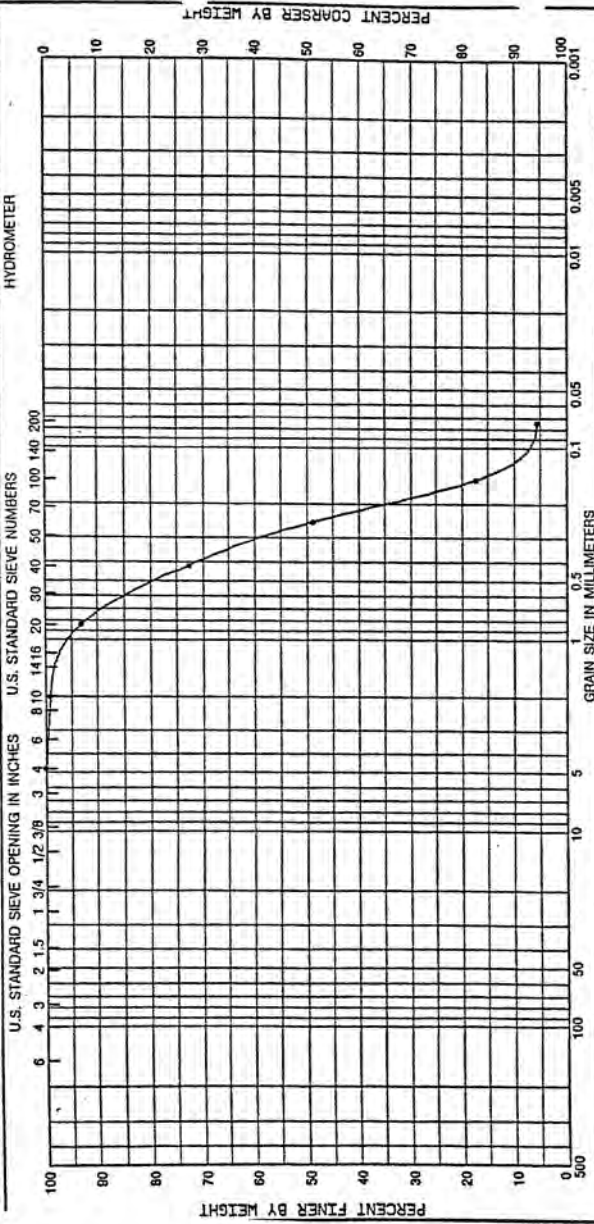


| COBBLES    |            | GRAVEL                                                                                                          |      | SAND   |        |        |    | SILT OR CLAY |    |
|------------|------------|-----------------------------------------------------------------------------------------------------------------|------|--------|--------|--------|----|--------------|----|
|            |            | COARSE                                                                                                          | FINE | COARSE | MEDIUM | FINE   |    |              |    |
| Sample No. | Depth/Elev | Classification                                                                                                  |      |        |        | Nat w% | LL | PL           | PI |
| 3          | 46.7-48.2' | Gray clayey sand high LL (SC-H), with a trace of gravel size weathered rock fragments and with a trace of mica. |      |        |        | 41.1   | 63 | 22           | 41 |
|            |            | Specific gravity = 2.75                                                                                         |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
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|            |            |                                                                                                                 |      |        |        |        |    |              |    |
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|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
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|            |            |                                                                                                                 |      |        |        |        |    |              |    |
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|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |
|            |            |                                                                                                                 |      |        |        |        |    |              |    |



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 5680  
REQUISITION: EN-65-92-53



| COBBLES    |            | GRAVEL                                 |      | SAND   |        | FINE |    | SILT OR CLAY            |    |
|------------|------------|----------------------------------------|------|--------|--------|------|----|-------------------------|----|
| Sample No. | Depth/Elev | COARSE                                 | FINE | COARSE | MEDIUM | FINE | LL | PL                      | PI |
| 1          | 41.1-44.1' |                                        |      |        |        |      |    |                         |    |
|            |            | Classification                         |      | Nat wt |        | NP   |    | NP                      |    |
|            |            | Ok, gray poorly graded silty sand      |      |        |        |      |    | Project Savannah Harbor |    |
|            |            | (SP-SM), with a trace of shell & mica. |      |        |        |      |    | Preliminary Borings     |    |
|            |            | Specific gravity = 2.67                |      |        |        |      |    | Lab No. 97/1763         |    |
|            |            |                                        |      |        |        |      |    | Boring No. SH-312       |    |
|            |            |                                        |      |        |        |      |    | Date 05/12/92           |    |

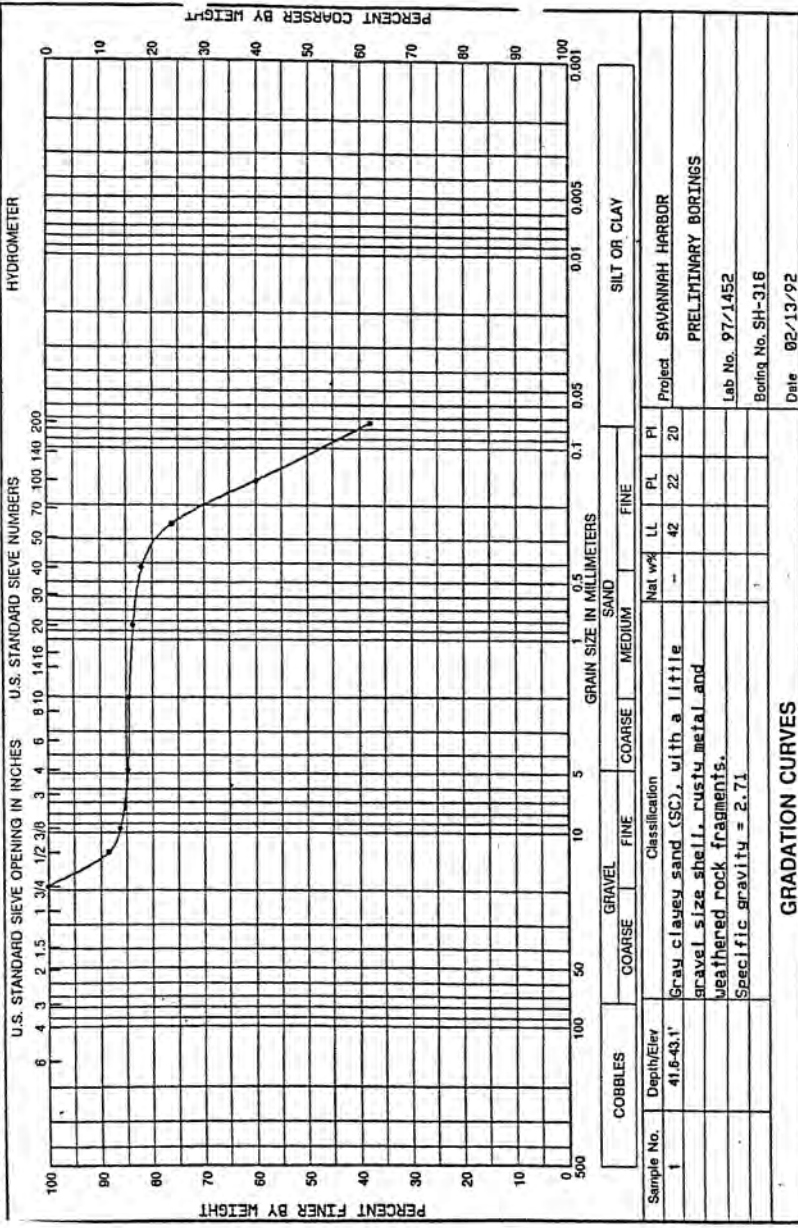
GRADATION CURVES



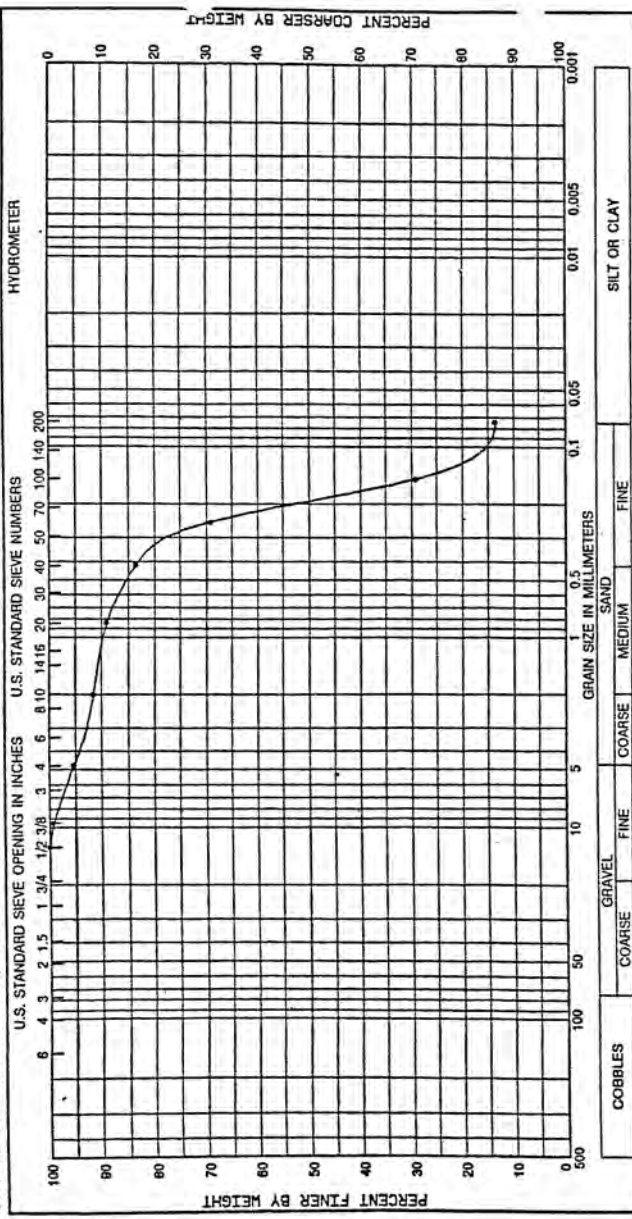


WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

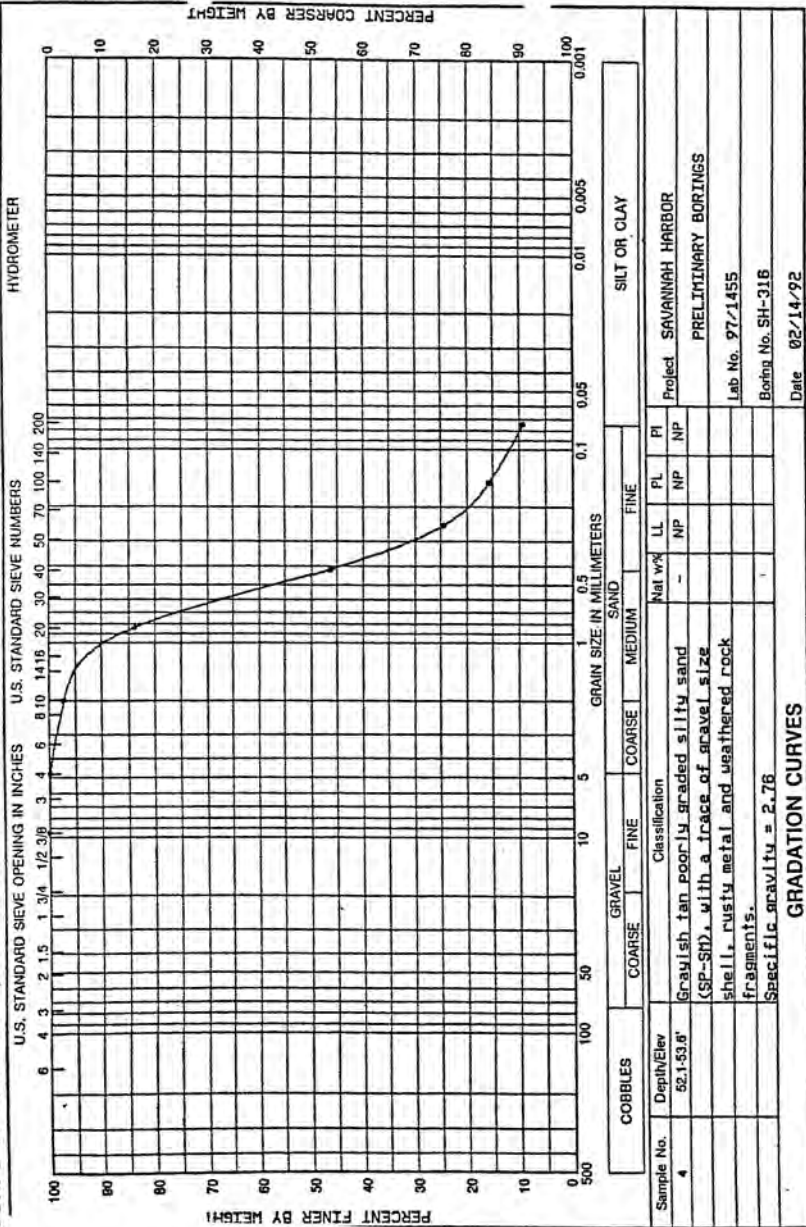


DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
 CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
 WORK ORDER: 6552  
 REQUISITION: EN-66-92-25





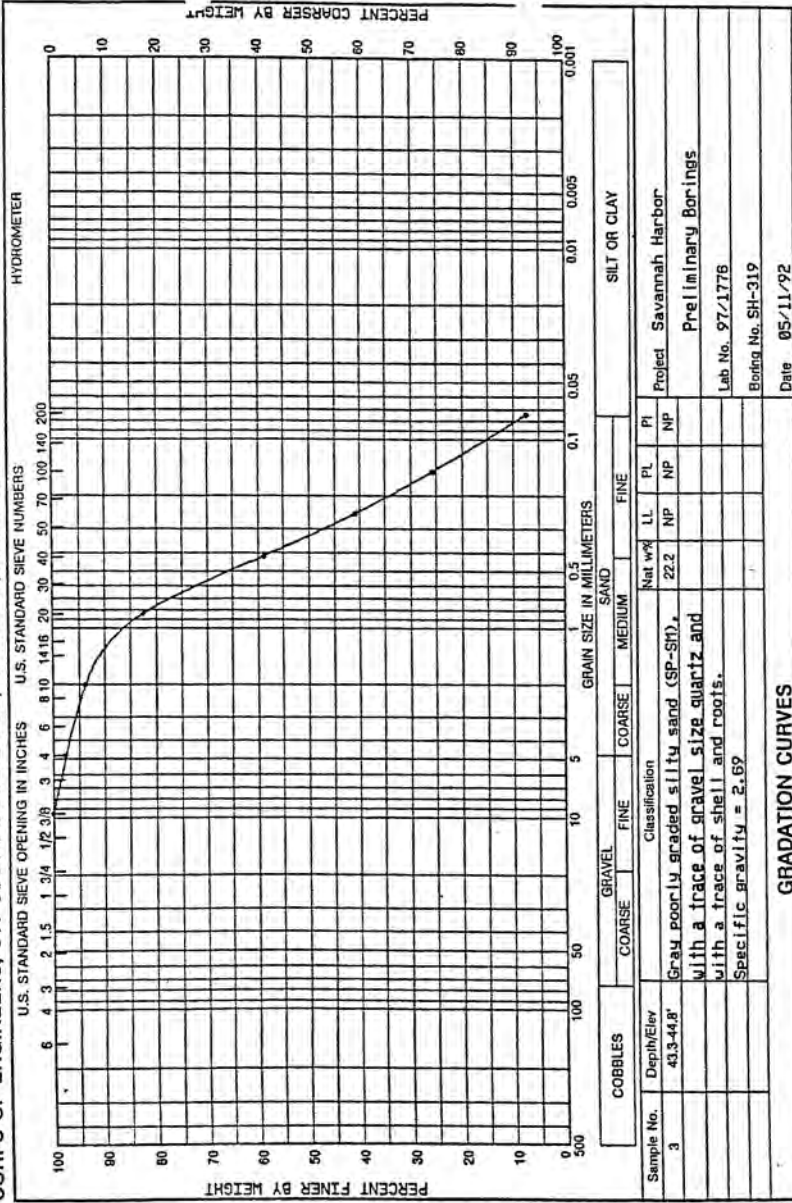
DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060  
WORK ORDER: 8552  
REQUISITION: EN-GG-92-25





WORK ORDER: 6600  
REQUISITION: EN-GG-92-53

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

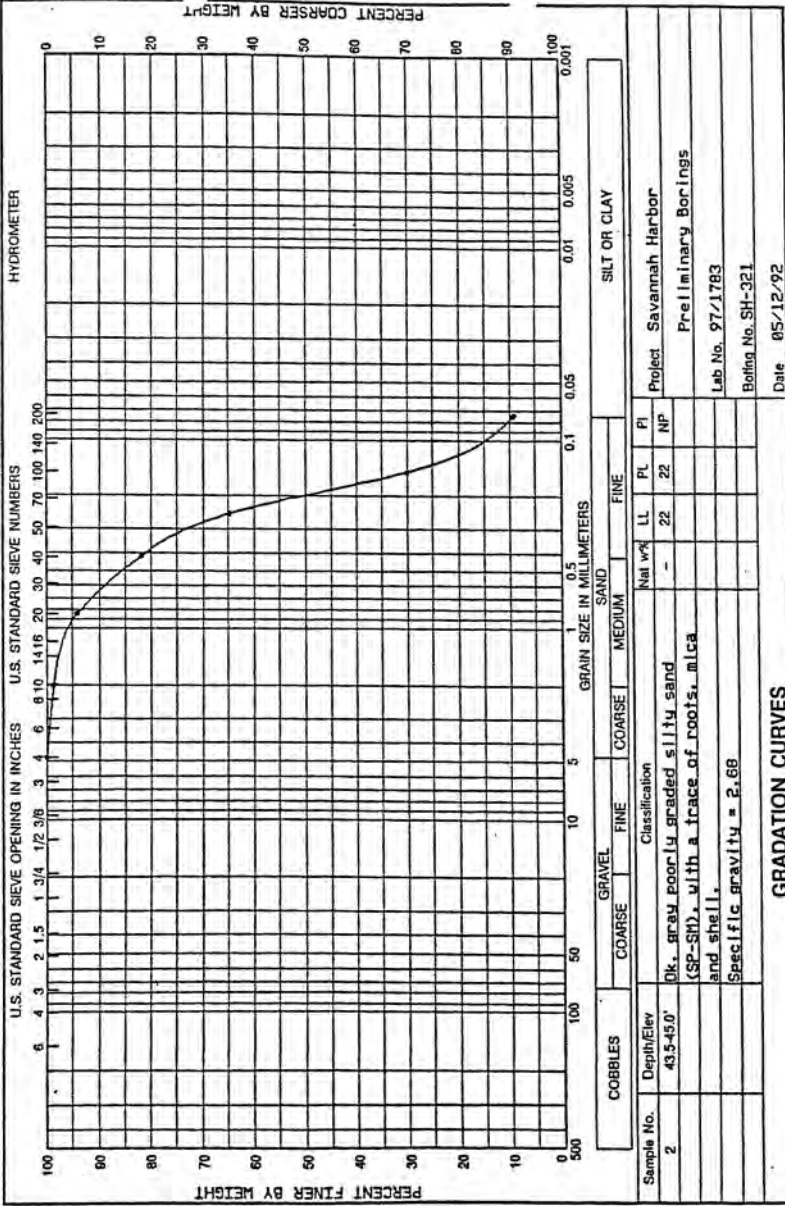


| Sample No.              | Depth/Elev | GRAVEL                                                                                                                                                              |      |  | SAND    |        |      | Project             |
|-------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--|---------|--------|------|---------------------|
|                         |            | COARSE                                                                                                                                                              | FINE |  | COARSE  | MEDIUM | FINE |                     |
| 3                       | 43.3-44.8' | Classification<br>Gray poorly graded silty sand (SP-Silt).<br>with a trace of gravel size quartz and<br>with a trace of shell and roots.<br>Specific gravity = 2.69 |      |  |         |        |      | Savannah Harbor     |
|                         |            |                                                                                                                                                                     |      |  | Nat wtk | LL     | PI   | Preliminary Borings |
|                         |            |                                                                                                                                                                     |      |  | 22.2    | NP     | NP   |                     |
|                         |            |                                                                                                                                                                     |      |  |         |        |      | Lab No. 97-1776     |
|                         |            |                                                                                                                                                                     |      |  |         |        |      | Boring No. SH-319   |
| <b>GRADATION CURVES</b> |            |                                                                                                                                                                     |      |  |         |        |      | Date 05/11/92       |

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

WORK ORDER: 6600

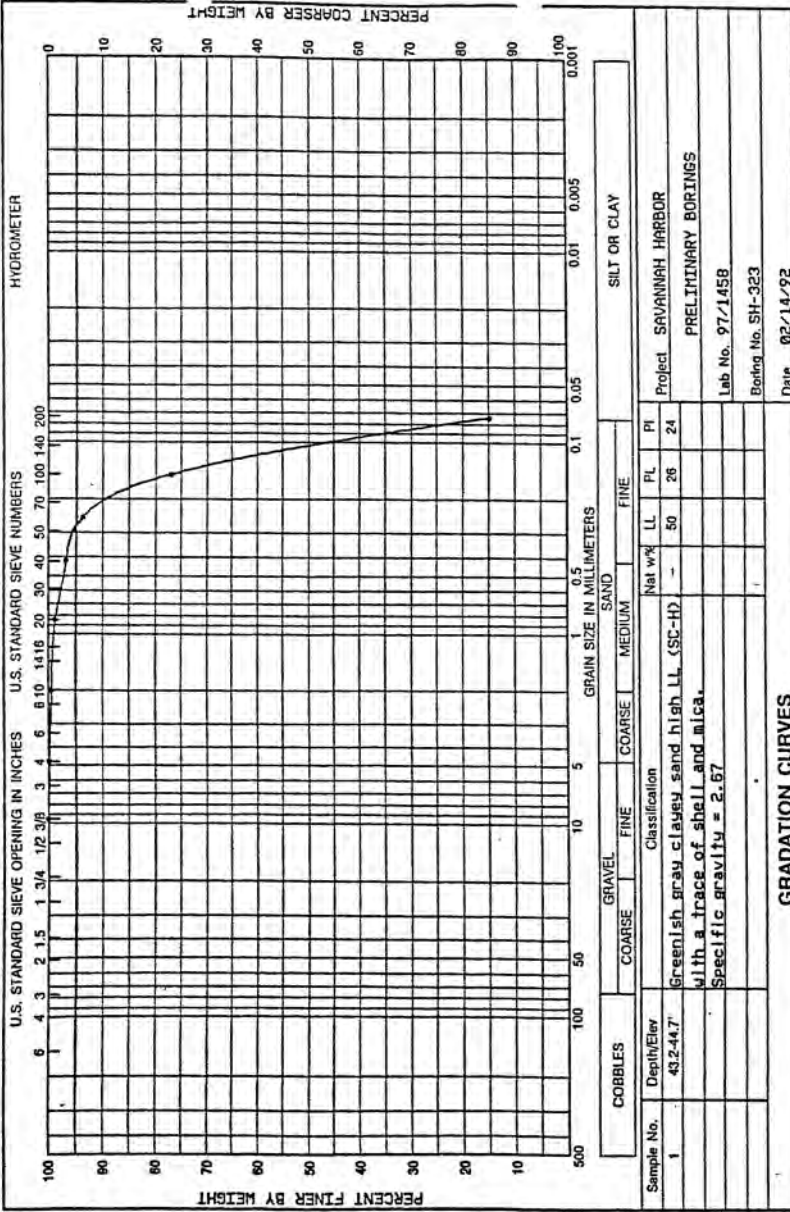
REQUISITION: EN-65-92-53



DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060

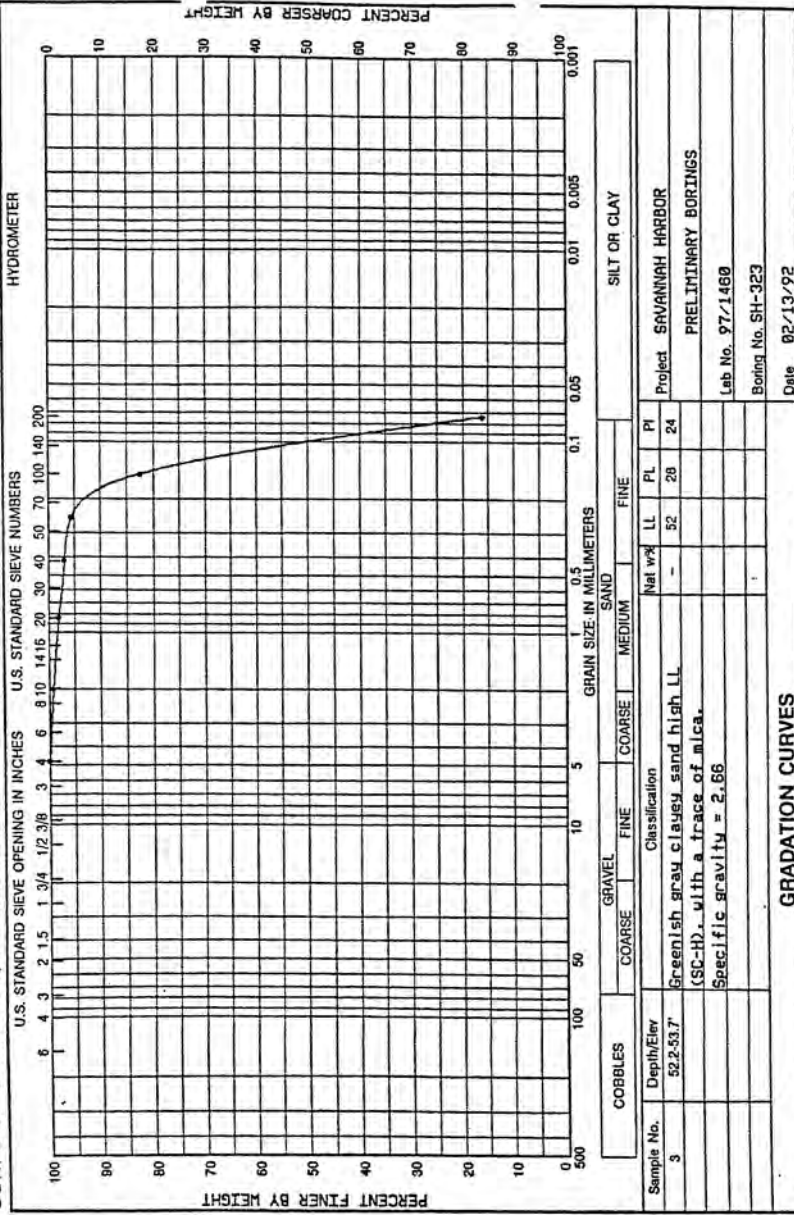
WORK ORDER: 6552

REQUISITION: EN-GG-92-25



WORK ORDER: 6552  
REQUISITION: EN-GG-92-25

DEPARTMENT OF THE ARMY, SOUTH ATLANTIC DIVISION LABORATORY  
CORPS OF ENGINEERS, 611 SOUTH COBB DRIVE, MARIETTA, GA. 30060





**US Army Corps of Engineers, Environmental & Materials Unit, Marietta, GA**

**Table 1 - Material Testing Summary**

| Lab Number | Boring Number | Sample No. | Depth (ft) | LL   | PL  | PI | %Pass No. 4 | %Pass No. 200 | MC (%) | SPG   | USCS Class | Color                       | Description                                                                                          |                                                                                                 |
|------------|---------------|------------|------------|------|-----|----|-------------|---------------|--------|-------|------------|-----------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| K6/45      | SH413         | 1          | 33.8       | 35.3 | --  | -- | 94.8        | 5.9           | 15.0   | 2.69  | --         | (Visual) Dark Grayish Brown | Poorly Graded Silty Sand (SP-SM), with a trace of gravel.                                            |                                                                                                 |
| K6/46      | SH413         | 4          | 38.3       | 39.8 | 28  | 21 | 80.9        | 9.6           | 16.1   | --    | SP-SC      | Dark Gray                   | Poorly Graded Clayey Sand (SP-SC), with a little gravel size and a little sand size shell fragments. |                                                                                                 |
| K6/47      | SH413         | 5          | 40.4       | 41.9 | 94  | 31 | 63          | 99.8          | 34.1   | 54.9  | 2.79       | SC                          | Olive Gray                                                                                           | Clayey Sand, High Liquid Limit (SC-H).                                                          |
| K6/48      | SH413         | 10         | 47.9       | 49.4 | 118 | 45 | 73          | 100.0         | 70.4   | 75.7  | --         | CH                          | Olive                                                                                                | Fat Clay (CH), with some sand. Plots near the A-Line.                                           |
| K6/49      | SH414         | 3          | 30.5       | 32.0 | --  | -- | --          | 85.1          | 7.9    | 13.9  | --         | --                          | (Visual) Light Brownish Gray                                                                         | Well Graded Silty Sand (SW-SM), with a little gravel.                                           |
| K6/50      | SH414         | 8          | 38.0       | 39.5 | 27  | 23 | 4           | 95.0          | 9.0    | 17.3  | --         | SW-SM                       | Dark Gray                                                                                            | Well Graded Silty Sand (SW-SM), with a trace of gravel.                                         |
| K6/51      | SH414         | 9          | 39.5       | 41.0 | 46  | 32 | 14          | 100.0         | 19.5   | 29.5  | --         | SM                          | Olive Gray                                                                                           | Silty Sand (SM).                                                                                |
| K6/52      | SH414         | 12         | 44.0       | 45.5 | 76  | 33 | 43          | 97.7          | 40.1   | 48.0  | --         | SC                          | Grayish Brown                                                                                        | Clayey Sand, High Liquid Limit (SC-H), with a trace of gravel.                                  |
| K6/53      | SH414         | 15         | 48.5       | 50.0 | 71  | 29 | 42          | 100.0         | 39.1   | 43.1  | --         | SC                          | Dark Grayish Brown                                                                                   | Clayey Sand, High Liquid Limit (SC-H).                                                          |
| K6/54      | SH415         | 4          | 29.1       | 30.6 | NP  | NP | NP          | 100.0         | 6.4    | 20.2  | --         | SP-SM                       | Brown                                                                                                | Poorly Graded Silty Sand (SP-SM).                                                               |
| K6/55      | SH415         | 7          | 33.6       | 35.1 | --  | -- | --          | 100.0         | 3.5    | 20.5  | --         | SP                          | (Visual) Gray                                                                                        | Poorly Graded Sand (SP). Insufficient Material for Atterberg Limits, Visual Conducted.          |
| K6/56      | SH415         | 11         | 39.6       | 41.1 | 93  | 32 | 61          | 100.0         | 56.5   | 53.2  | 2.76       | CH                          | Grayish Brown                                                                                        | Sandy Fat Clay (CH).                                                                            |
| K6/57      | SH415         | 14         | 44.1       | 45.6 | 110 | 39 | 71          | 100.0         | 61.9   | 62.7  | --         | CH                          | Dark Grayish Brown                                                                                   | Sandy Fat Clay (CH).                                                                            |
| K6/58      | SH415         | 18         | 50.1       | 51.6 | 86  | 23 | 43          | 100.0         | 56.4   | 37.1  | 2.81       | CH                          | Grayish Brown                                                                                        | Sandy Fat Clay (CH).                                                                            |
| K6/59      | SH416         | 4          | 39.5       | 41.0 | --  | -- | --          | 99.7          | 5.6    | 20.1  | --         | --                          | (Visual) Light Yellowish Brown                                                                       | Poorly Graded Silty Sand (SP-SM). Insufficient Material for Atterberg Limits, Visual Conducted. |
| K6/60      | SH416         | 9          | 47.0       | 48.5 | 124 | 48 | 76          | 100.0         | 77.1   | 70.6  | --         | CH                          | Olive Gray                                                                                           | Fat Clay (CH), with some sand. Plots near the A-Line.                                           |
| K6/61      | SH416         | 12         | 51.5       | 53.0 | 199 | 89 | 110         | 100.0         | 95.9   | 91.3  | --         | MH                          | Olive Gray                                                                                           | Clayey Inorganic Silt, High Liquid Limit (MH), with a trace of sand.                            |
| K6/62      | SH417         | 7          | 30.0       | 31.5 | --  | -- | --          | 100.0         | 7.8    | 22.6  | 2.66       | --                          | (Visual) Grayish Brown                                                                               | Poorly Graded Silty Sand (SP-SM). Insufficient Material for Atterberg Limits, Visual Conducted. |
| K6/63      | SH417         | 20         | 49.5       | 51.0 | 96  | 31 | 65          | 94.5          | 43.4   | 51.0  | 2.71       | SC                          | Olive Gray                                                                                           | Clayey Sand, High Liquid Limit (SC-H), with a trace of gravel.                                  |
| K6/64      | SH418         | 2          | 47.8       | 49.3 | 131 | 40 | 91          | 87.0          | 57.9   | 161.0 | --         | CH                          | Black                                                                                                | Sandy Fat Clay (CH), with a little gravel.                                                      |
| K6/65      | SH418         | 5          | 52.3       | 53.8 | 124 | 60 | 64          | 100.0         | 73.2   | 91.8  | --         | MH                          | Olive Gray                                                                                           | Clayey Inorganic Silt High Liquid Limit (MH), with some sand.                                   |
| K6/66      | SH419         | 3          | 49.9       | 51.4 | 67  | 26 | 41          | 99.3          | 29.8   | 48.7  | --         | SC                          | Olive Gray                                                                                           | Clayey Sand, High Liquid Limit (SC-H).                                                          |

4-Oct-02

CESAS-EN-GGe

## US Army Corps of Engineers, Environmental &amp; Materials Unit, Marietta, GA

Table 1 - Material Testing Summary

| Lab Number | Boring Number | Sample No. | Depth (ft) | LL   | PL  | FI | %Pass No. 4 | %Pass No. 200 | MC (%) | SPG   | USCS Class | Color | Description                                                                                           |
|------------|---------------|------------|------------|------|-----|----|-------------|---------------|--------|-------|------------|-------|-------------------------------------------------------------------------------------------------------|
| K6/67      | SH420         | 3          | 50.0       | 51.5 | 168 | 78 | 90          | 100.0         | 90.7   | 88.7  | 2.65       | MH    | Clayey Inorganic Silt High Liquid Limit (MH), with a trace of sand                                    |
| K6/68      | SH421         | 3          | 48.5       | 50.0 | 168 | 63 | 125         | 100.0         | 99.1   | 116.2 | —          | CH    | Fat Clay (CH). Plots near the A-Line.                                                                 |
| K6/69      | SH422         | 3          | 48.2       | 48.7 | 64  | 20 | 44          | 100.0         | 9.1    | 27.7  | —          | SP-SC | Poorly Graded Clayey Sand, High Liquid Limit (SP-SC-H).                                               |
| K6/70      | SH423         | 3          | 48.4       | 49.9 | 40  | 29 | 11          | 100.0         | 16.4   | 30.1  | 2.65       | SM    | Silty Sand (SM).                                                                                      |
| K6/71      | SH424         | 1          | 44.4       | 45.9 | 51  | 27 | 24          | 100.0         | 26.5   | 40.2  | —          | SC    | Silty Clayey Sand, High Liquid Limit (SC-H). Plots near the A-Line.                                   |
| K6/72      | SH424         | 3          | 48.4       | 49.9 | 51  | 25 | 26          | 100.0         | 17.2   | 34.4  | —          | SC    | Clayey Sand, High Liquid Limit (SC-H).                                                                |
| K6/73      | SH425         | 3          | 49.7       | 51.2 | 52  | 25 | 27          | 99.5          | 17.6   | 31.5  | —          | SC    | Clayey Sand, High Liquid Limit (SC-H).                                                                |
| K6/74      | SH426         | 3          | 49.3       | 50.8 | 71  | 20 | 51          | 99.4          | 51.5   | 49.5  | —          | CH    | Sandy Fat Clay (CH).                                                                                  |
| K6/75      | SH427         | 2          | 48.0       | 49.5 | 31  | 25 | 6           | 97.1          | 8.5    | 20.2  | 2.73       | SP-SM | Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and a little sand size shell fragments. |
| K6/76      | SH428         | 3          | 45.6       | 47.1 | NP  | NP | NP          | 100.0         | 17.1   | 20.3  | —          | SM    | Silty Sand (SM), with a trace of sand size shell fragments.                                           |
| K6/77      | SH428         | 4          | 47.1       | 48.6 | NP  | NP | NP          | 99.7          | 15.3   | 22.3  | —          | SM    | Silty Sand (SM), with a trace of sand size shell fragments.                                           |
| K6/78      | SH429         | 2          | 47.9       | 49.4 | NP  | NP | NP          | 100.0         | 16.5   | 33.5  | —          | SM    | Silty Sand (SM).                                                                                      |
| K6/79      | SH429         | 4          | 50.9       | 52.4 | NP  | NP | NP          | 99.7          | 8.1    | 24.9  | —          | SP-SM | Poorly Graded Silty Sand (SP-SM).                                                                     |
| K6/80      | SH430         | 3          | 48.5       | 50.0 | NP  | NP | NP          | 100.0         | 10.9   | 12.0  | 2.70       | SW-SM | Well Graded Silty Sand (SW-SM).                                                                       |
| K6/81      | SH431         | 2          | 48.6       | 50.1 | NP  | NP | NP          | 99.8          | 9.5    | 22.4  | 2.73       | SP-SM | Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and a little sand size shell fragments. |
| K6/82      | SH431         | 9          | 60.6       | 62.1 | NP  | NP | NP          | 100.0         | 12.8   | 24.1  | 2.70       | SM    | Silty Sand (SM).                                                                                      |
| K6/83      | SH432         | 2          | 46.0       | 48.0 | —   | —  | —           | 93.3          | 8.7    | 23.5  | 2.73       | —     | (Visual) Olive Gray                                                                                   |
| K6/84      | SH433         | 1          | 46.4       | 47.9 | NP  | NP | NP          | 99.9          | 8.4    | 25.2  | 2.72       | SP-SM | Poorly Graded Silty Sand (SP-SM), with a little sand size shell fragments.                            |
| K6/85      | SH433         | 5          | 55.4       | 56.9 | 120 | 31 | 89          | 100.0         | 84.7   | 85.8  | 2.77       | CH    | Fat Clay (CH), with a little sand.                                                                    |
| K6/86      | SH434         | 1          | 49.2       | 50.7 | NP  | NP | NP          | 99.5          | 12.9   | 30.3  | —          | SM    | Silty Sand (SM), with a trace of sand size shell fragments.                                           |
| K6/87      | SH435         | 3          | 54.0       | 54.7 | —   | —  | —           | 96.3          | 5.8    | 19.3  | 2.73       | —     | (Visual) Olive Gray & White                                                                           |



## US Army Corps of Engineers, Environmental &amp; Materials Unit, Marietta, GA

4-Oct-02

Table 1 - Material Testing Summary

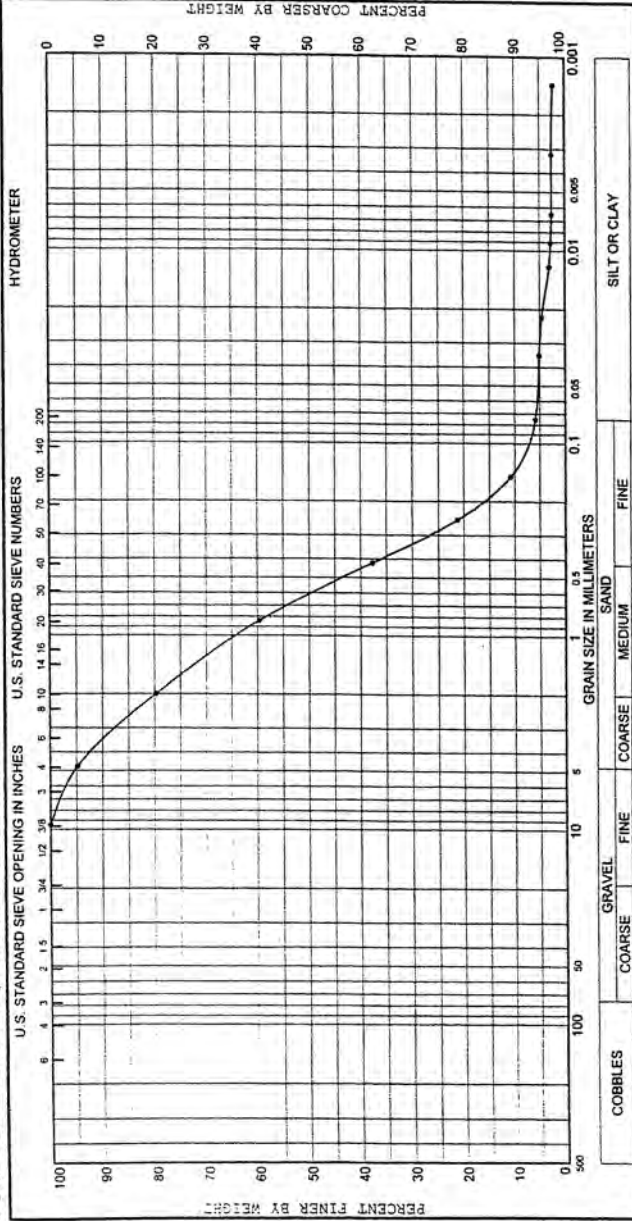
| Lab Number | Boiling Number | Sample No. | Depth (ft) | LL | PL | FI | %Pass No. 4 | %Pass No. 200 | MC (%) | SPG  | USCS Class | Color                   | Description                                                                                                         |
|------------|----------------|------------|------------|----|----|----|-------------|---------------|--------|------|------------|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| K6/88      | SH436          | 1          | 49.2       | NP | NP | NP | 99.0        | 3.4           | 19.0   | 2.70 | SP         | Olive Gray              | Poorly Graded Sand (SP), with a trace of sand size shell fragments.                                                 |
| K6/89      | SH436          | 3          | 50.7       | NP | NP | NP | 97.7        | 5.8           | 13.7   | ---  | SW-SM      | Olive Gray              | Well Graded Silty Sand (SW-SM), with a trace of gravel.                                                             |
| K6/90      | SH437          | 1          | 51.6       | NP | NP | NP | 100.0       | 8.2           | 16.3   | 2.73 | SW-SM      | Olive Gray              | Well Graded Silty Sand (SW-SM).                                                                                     |
| K6/91      | SH437          | 5          | 59.1       | NP | NP | NP | 100.0       | 10.8          | 23.5   | 2.83 | SP-SC      | Dark Olive Gray         | Poorly Graded Clayey Sand (SP-SC).                                                                                  |
| K6/92      | SH439          | 1          | 43.5       | NP | NP | NP | 99.5        | 15.6          | 31.8   | ---  | SM         | Gray                    | Silty Sand (SM), with a trace of sand size shell fragments.                                                         |
| K6/93      | SH439          | 3          | 46.5       | NP | NP | NP | 100.0       | 13.6          | 23.4   | ---  | SM         | Olive Gray              | Silty Sand (SM).                                                                                                    |
| K6/94      | SH439          | 5          | 50.0       | NP | NP | NP | 100.0       | 20.9          | 36.4   | ---  | SC         | Olive                   | Clayey Sand (SC).                                                                                                   |
| K6/95      | SH441          | 2          | 46.5       | NP | NP | NP | 100.0       | 12.5          | 28.7   | ---  | SM         | Dark Olive Gray         | Silty Sand (SM), with a trace of sand size shell fragments.                                                         |
| K6/96      | SH441          | 6          | 53.0       | NP | NP | NP | 100.0       | 15.7          | 27.5   | ---  | ---        | (Visual) Dark Gray      | Well Graded Sand (SW).                                                                                              |
| K6/97      | SH442          | 1          | 47.4       | NP | NP | NP | 97.6        | 8.0           | 15.7   | ---  | SW-SM      | Olive                   | Well Graded Silty Sand (SW-SM), with a trace of gravel size and sand size shell fragments.                          |
| K6/98      | SH442          | 6          | 55.4       | NP | NP | NP | 99.0        | 6.0           | 20.7   | ---  | SP-SM      | Dark Olive Gray & White | Poorly Graded Silty Sand (SP-SM), with a trace of gravel size and sand size shell fragments. Plots near the A-Line. |
| K6/99      | SH443          | 1          | 48.8       | NP | NP | NP | 97.7        | 2.8           | 20.5   | ---  | SP         | Olive Gray              | Poorly Graded Sand (SP), with a trace of gravel.                                                                    |
| K6/100     | SH443          | 3          | 52.8       | NP | NP | NP | 100.0       | 95.9          | 106.3  | ---  | CH         | Dark Gray               | Fat Clay (CH), with a trace of sand.                                                                                |
| K6/101     | SH443          | 5          | 54.8       | NP | NP | NP | 99.3        | 38.3          | 55.3   | ---  | SC         | Dark Olive Gray         | Clayey Sand, High Liquid Limit (SC-H), with a trace of sand size shell fragments.                                   |



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W338JG22119420



|            |   |            |             |                |                                                                                        |        |      |    |  |            |                                                                            |
|------------|---|------------|-------------|----------------|----------------------------------------------------------------------------------------|--------|------|----|--|------------|----------------------------------------------------------------------------|
| Sample No. | 1 | Depth (ft) | 33.8 - 35.3 | Classification | (Visual) Dark Grayish Brown, Poorly Graded Silty Sand (SP-SM), with a trace of gravel. | Nat w% | 15.0 | PI |  | Project    | Savannah Harbor                                                            |
|            |   |            |             |                |                                                                                        |        |      |    |  |            | Harbor Expansion, Savannah, Georgia                                        |
|            |   |            |             |                |                                                                                        |        |      |    |  | Lab No.    | K6/45                                                                      |
|            |   |            |             |                |                                                                                        |        |      |    |  | Boring No. | SH413                                                                      |
|            |   |            |             |                |                                                                                        |        |      |    |  | Date       | 10/7/02                                                                    |
|            |   |            |             |                |                                                                                        |        |      |    |  |            | Test Conducted in General accordance with ASTM's D422, D418, D54, & D2487. |

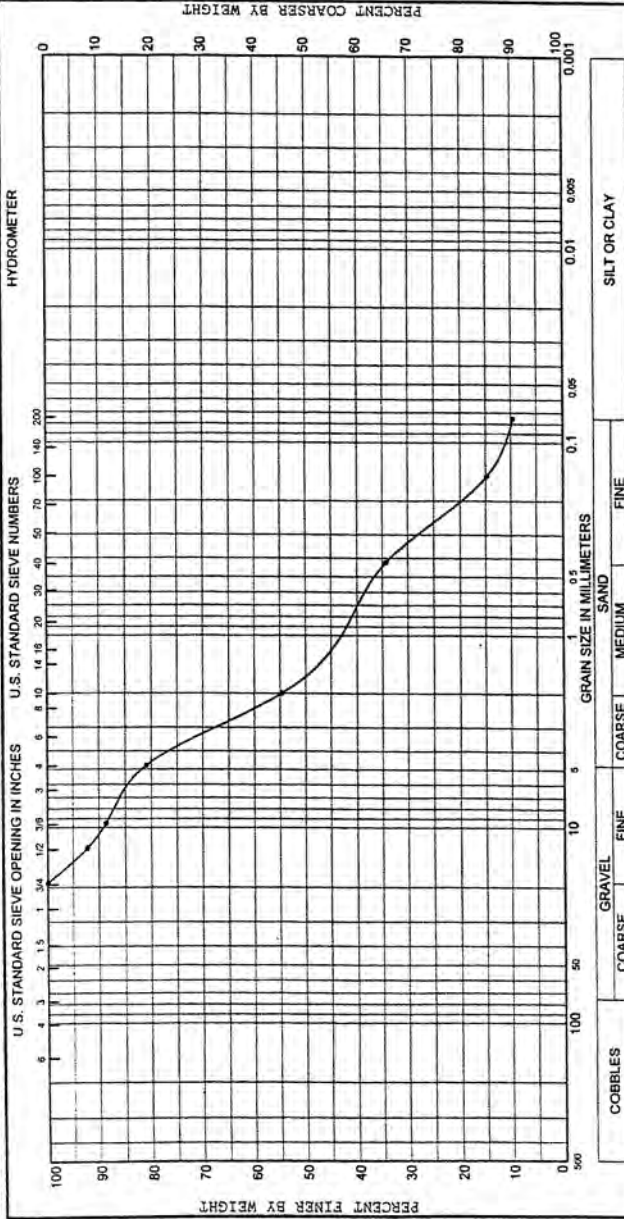
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W33SG22119420



| Sample No.       |  | Depth (ft)  | Classification                                                                                                  | Nat w% | LL | PL | PI | Project                                                                  |
|------------------|--|-------------|-----------------------------------------------------------------------------------------------------------------|--------|----|----|----|--------------------------------------------------------------------------|
| 4                |  | 38.3 - 39.8 | Dark Gray, Poorly Graded Clayey Sand (SP-SC), with a little gravel size and a little sand size shell fragments. | 16.1   | 28 | 21 | 7  | Savannah Harbor                                                          |
|                  |  |             |                                                                                                                 |        |    |    |    | Harbor Expansion, Savannah, Georgia                                      |
|                  |  |             |                                                                                                                 |        |    |    |    | Lab No. K6/46                                                            |
|                  |  |             |                                                                                                                 |        |    |    |    | Boring No. SH413                                                         |
|                  |  |             |                                                                                                                 |        |    |    |    | Tests Conducted in General Accordance with ASTM D422, D418, D94, & D2487 |
| GRADATION CURVES |  |             |                                                                                                                 |        |    |    |    | Date 10/7/02                                                             |

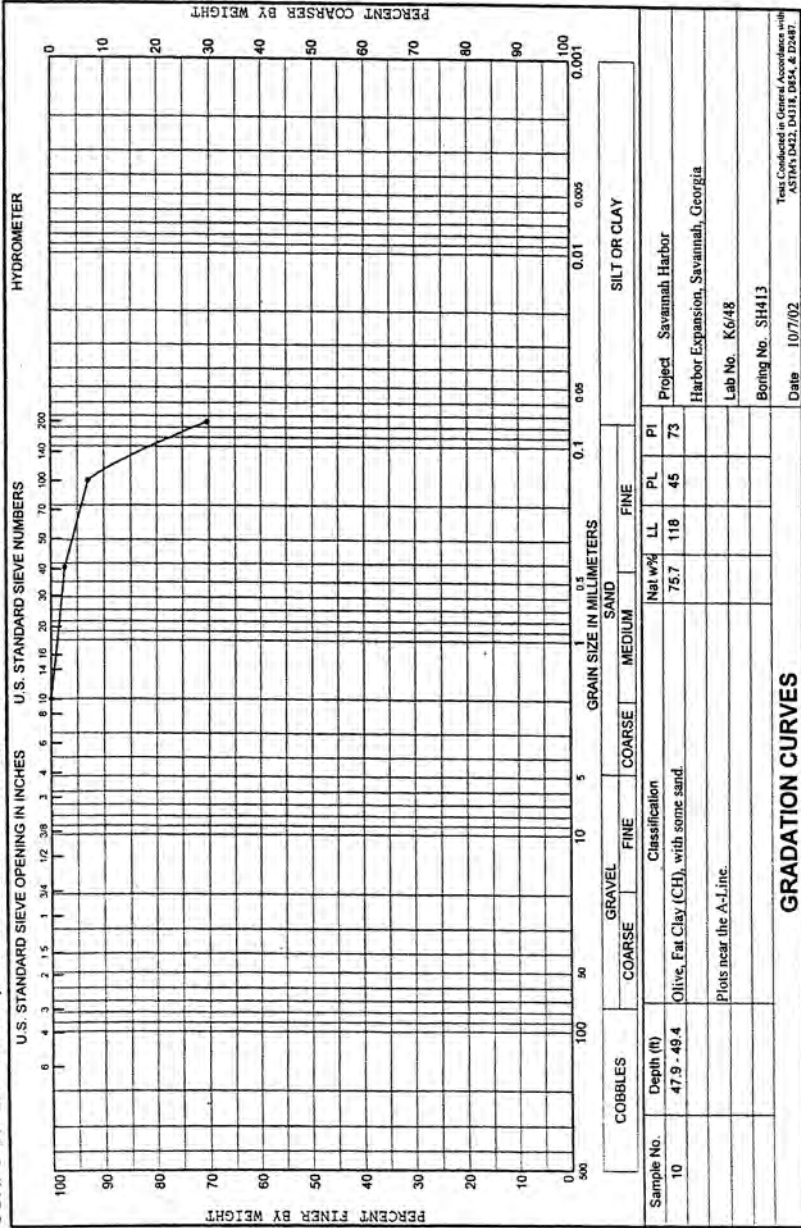
GRADATION CURVES





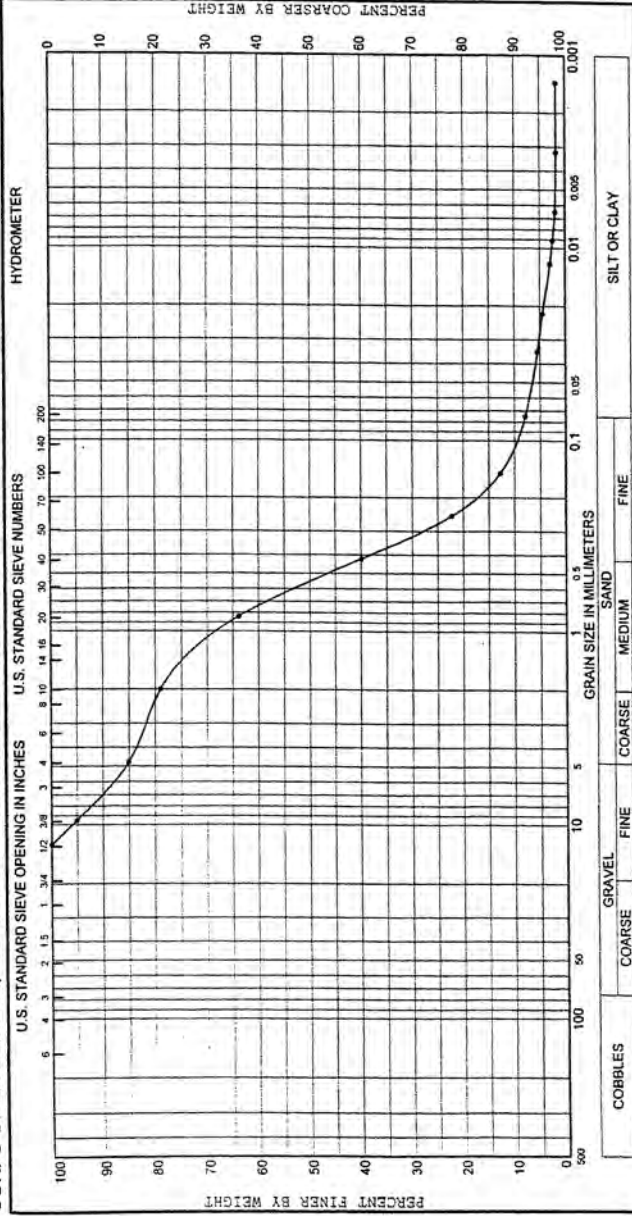
DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406  
REQUISITION: W33SJG22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240a  
REQUISITION: W33SJG22119420



|                                     |   |            |             |                |                                                                                    |        |      |    |  |    |    |
|-------------------------------------|---|------------|-------------|----------------|------------------------------------------------------------------------------------|--------|------|----|--|----|----|
| Sample No.                          | 3 | Depth (ft) | 30.5 - 32.0 | Classification | (Visual) Light Brownish Gray, Well Graded Silty Sand (SW-SM), with a little gravel | Nat w% | 13.9 | LL |  | PL | PI |
| Project Savannah Harbor             |   |            |             |                |                                                                                    |        |      |    |  |    |    |
| Harbor Expansion, Savannah, Georgia |   |            |             |                |                                                                                    |        |      |    |  |    |    |
| Lab No. K6/49                       |   |            |             |                |                                                                                    |        |      |    |  |    |    |
| Boring No. SH414                    |   |            |             |                |                                                                                    |        |      |    |  |    |    |
| Date 10/7/02                        |   |            |             |                |                                                                                    |        |      |    |  |    |    |

Test Conducted in General Accordance with  
ASTM D422, D418, D494, & D497

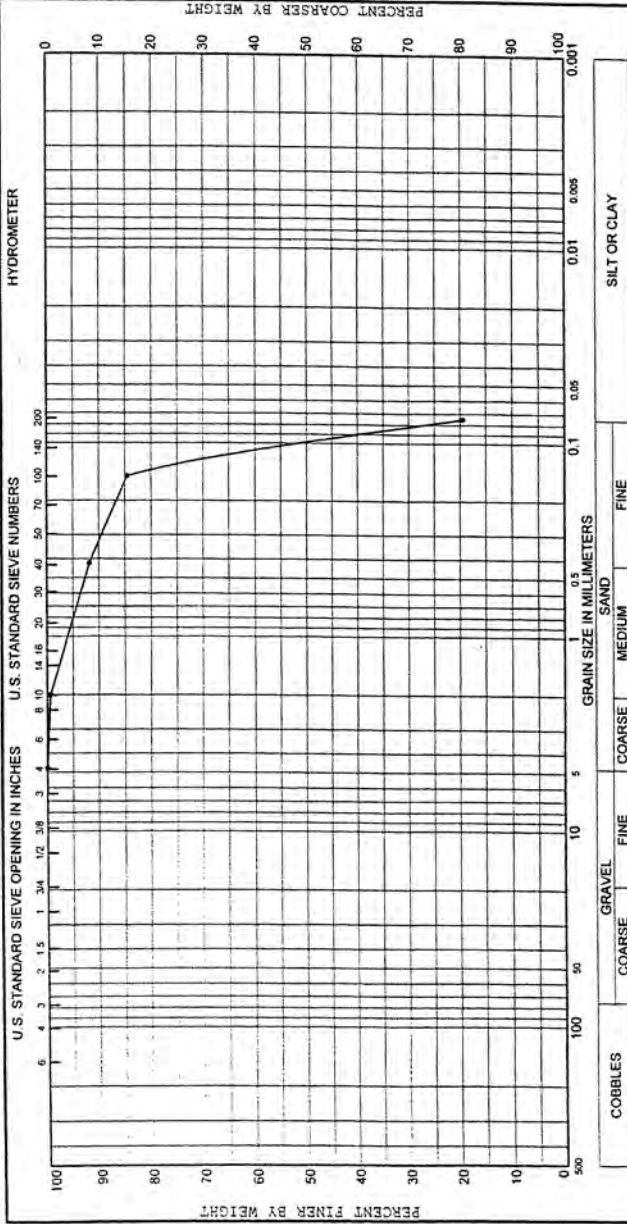
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240a

REQUISITION: W335JG22119420



GRADATION CURVES

Project Savannah Harbor  
Harbor Expansion, Savannah, Georgia  
Lab No. K6/51  
Boring No. SH414  
Date 10/7/02

Tests Conducted in General Accordance with  
ASTM D422, D418, D54, & D2487



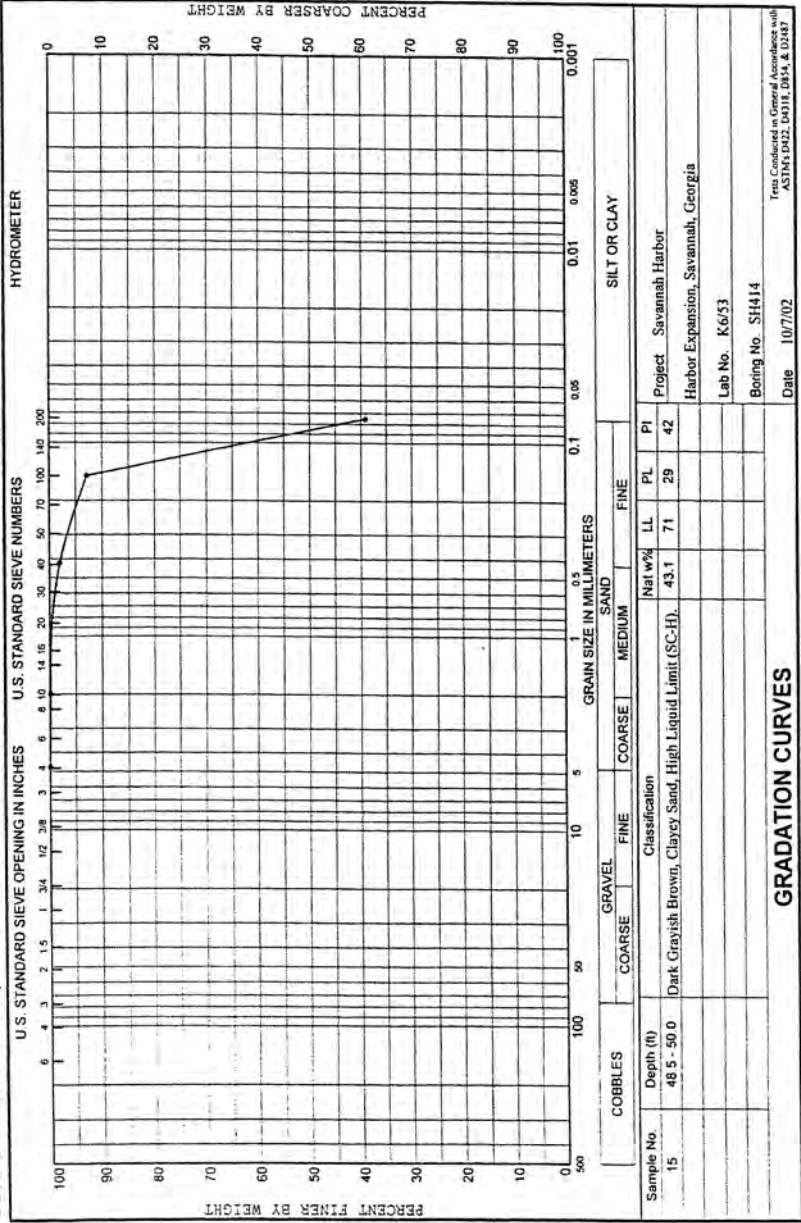




DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406

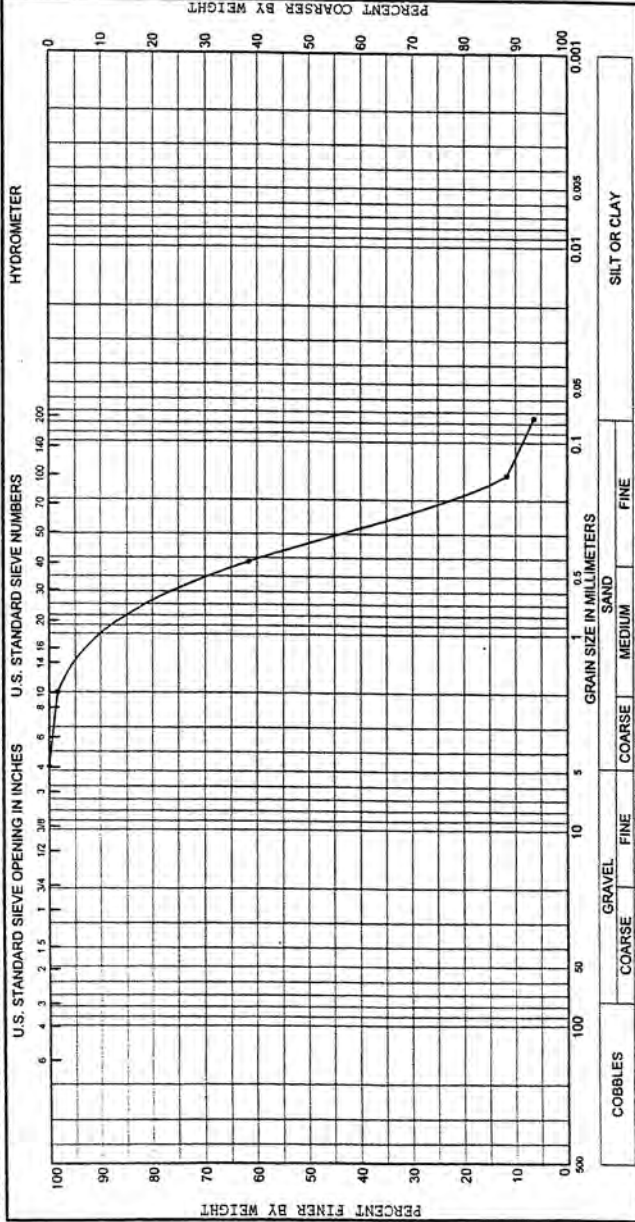
REQUISITION: W335JG22119420





DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240\*  
REQUISITION: W33SJG22119420



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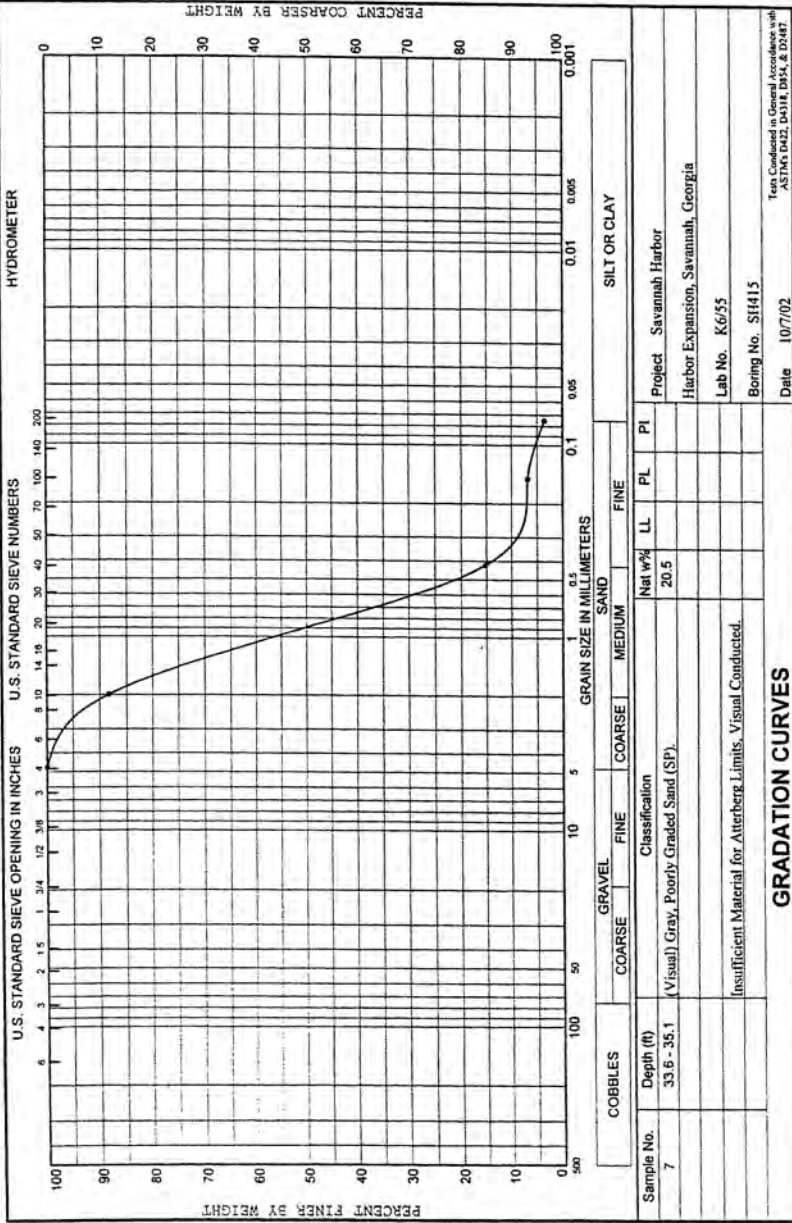
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
 CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240a

REQUISITION: W338JG22119420

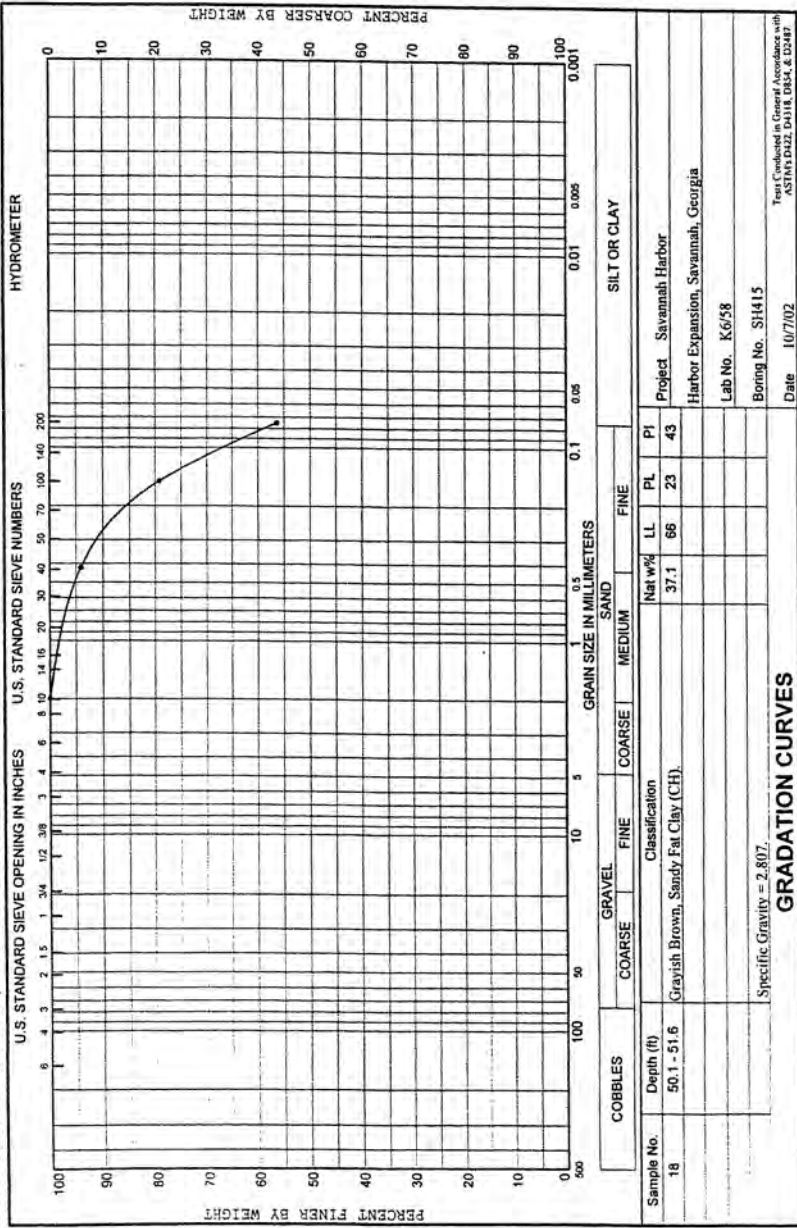






DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
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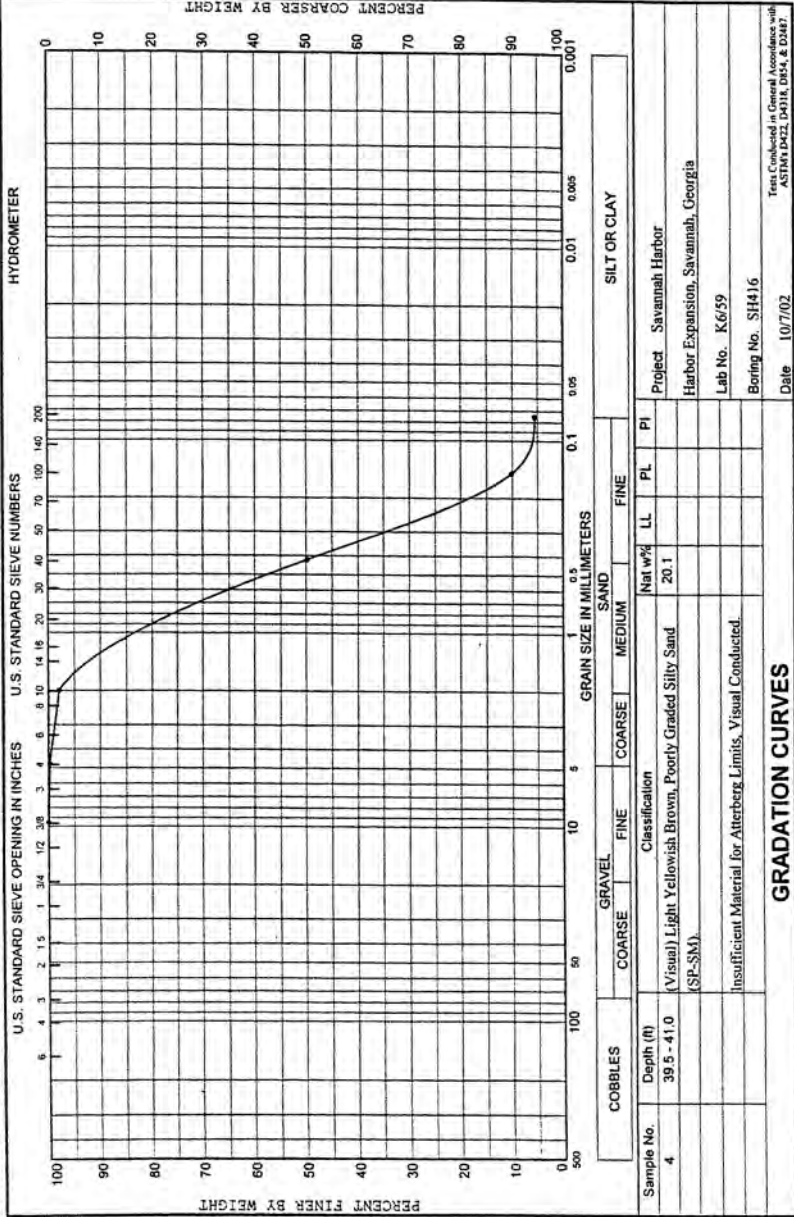
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REQUISITION: W338JG22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
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WORK ORDER: 240e

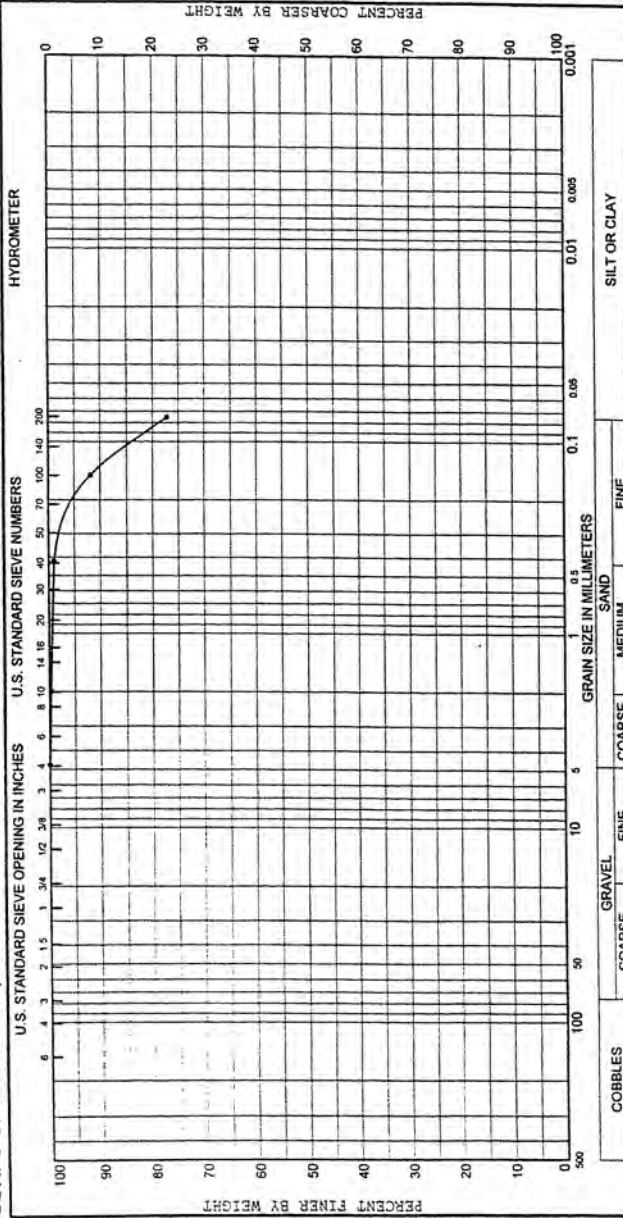
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DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W338JG22119420



| Sample No. | Depth (ft)  | GRAVEL                                     |      |        | SAND    |      |    | SILT OR CLAY                        |    |  |
|------------|-------------|--------------------------------------------|------|--------|---------|------|----|-------------------------------------|----|--|
|            |             | COARSE                                     | FINE | COARSE | MEDIUM  | FINE | PI | PL                                  | PI |  |
| 9          | 47.0 - 48.5 | Classification                             |      |        | Natural |      |    | Project                             |    |  |
|            |             | Olive Gray, Fat Clay (CH), with some sand. |      |        | 70.6    |      |    | Savannah Harbor                     |    |  |
|            |             | Plots near the A-Line.                     |      |        | 124     |      |    | Harbor Expansion, Savannah, Georgia |    |  |
|            |             |                                            |      |        | 48      |      |    | Lab No. K660                        |    |  |
|            |             |                                            |      |        |         |      |    | Boring No. SH416                    |    |  |
|            |             |                                            |      |        |         |      |    | Date 10/7/02                        |    |  |

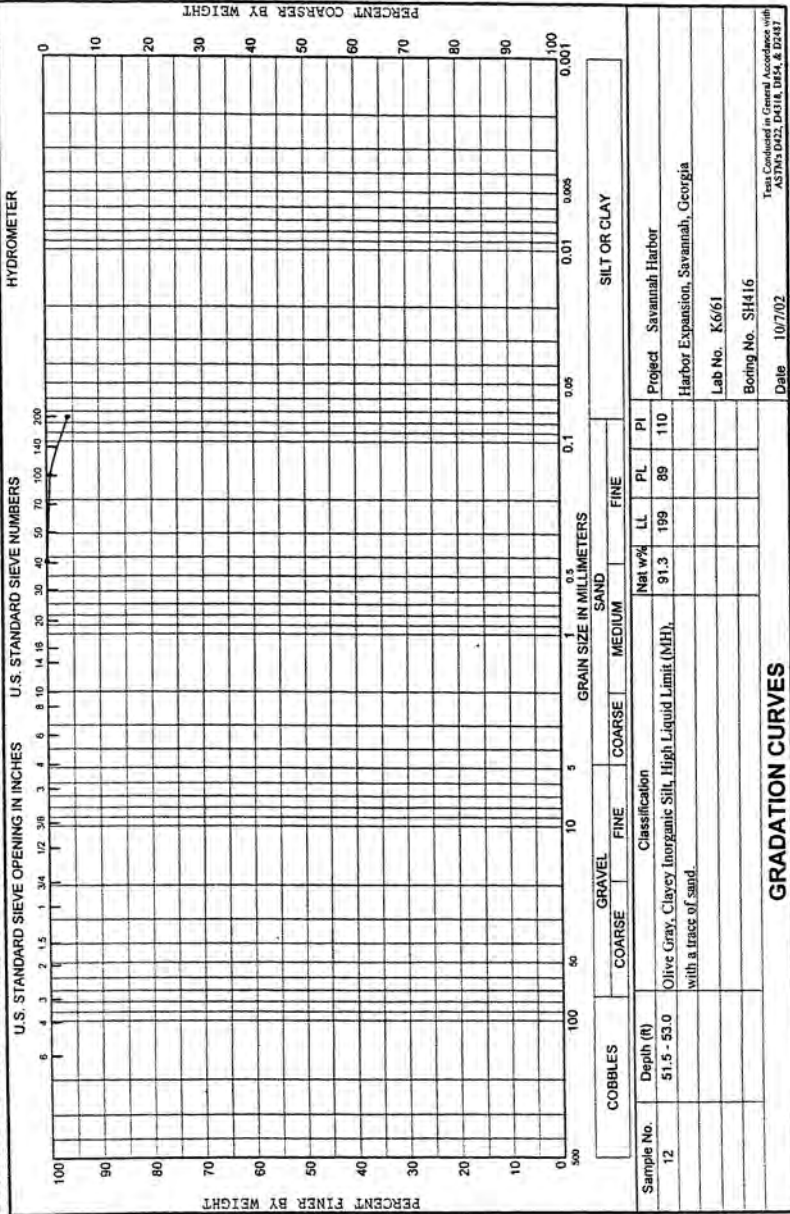
GRADATION CURVES

Test Conducted in General Accordance with  
ASTM D422, D418, D454, & D2487.





DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

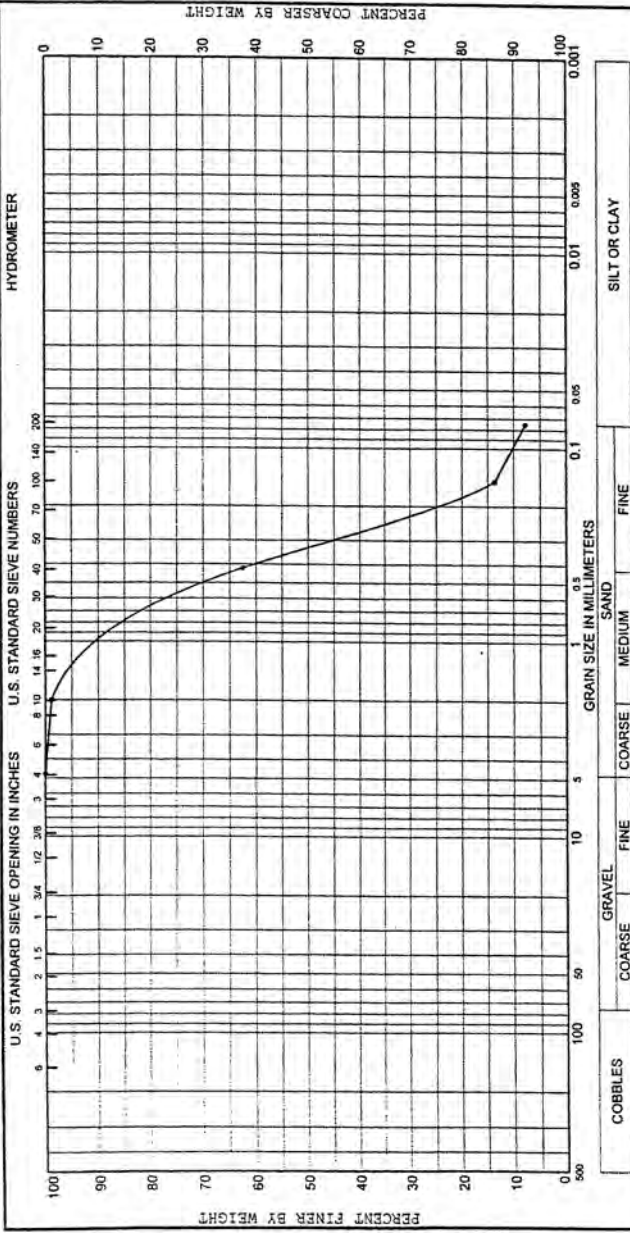




DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

REQUISITION: W338JG22119420



|                                                                |                           |                                                                                                                                              |                |    |    |    |              |
|----------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------|----|----|----|--------------|
| Sample No.<br>7                                                | Depth (ft)<br>30.0 - 31.5 | Classification<br>(Visual) Grayish Brown, Poorly Graded Silty Sand (SP-SM).<br>Insufficient Material for Atterberg Limits, Visual Conducted. | Nat w%<br>22.6 | LL | PL | PI | SILT OR CLAY |
|                                                                |                           |                                                                                                                                              |                |    |    |    |              |
| Project Savannah Harbor<br>Harbor Expansion, Savannah, Georgia |                           |                                                                                                                                              |                |    |    |    |              |
| Lab No. K6/62                                                  |                           |                                                                                                                                              |                |    |    |    |              |
| Boring No. SH417                                               |                           |                                                                                                                                              |                |    |    |    |              |
| Date 10/7/02                                                   |                           |                                                                                                                                              |                |    |    |    |              |

Test Conducted in General accordance with  
ASTM D422, D422-1, D422-2, D422-3, & D422-4

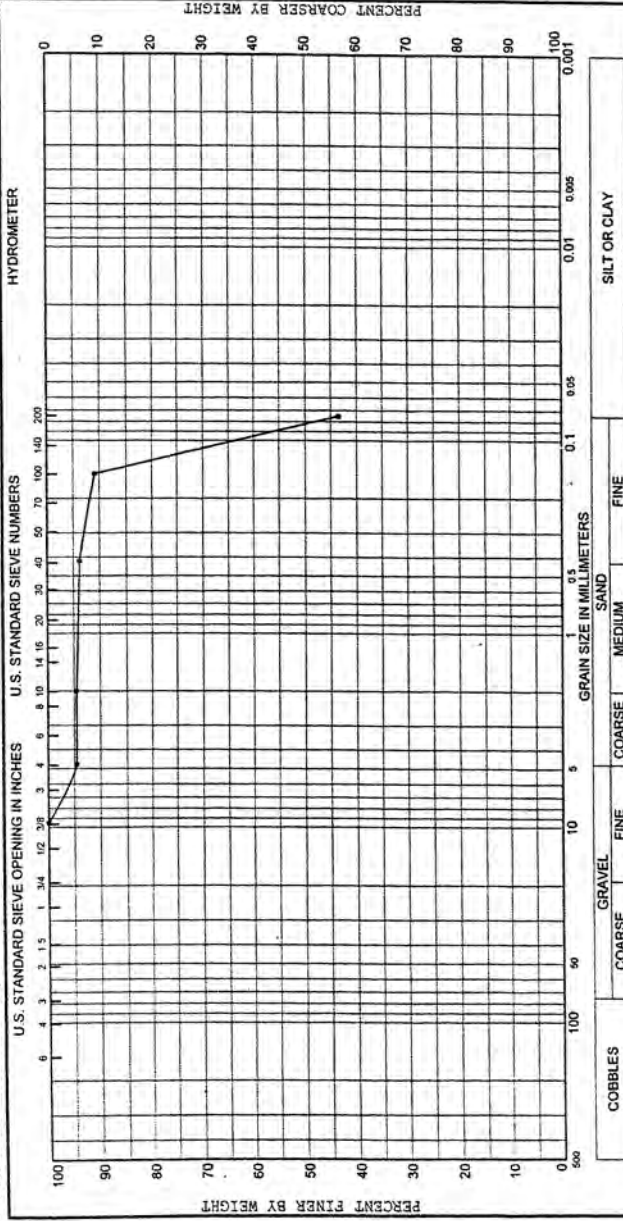
GRADATION CURVES



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406

REQUESTION: W335JG22119420



| Sample No. | Depth (ft)  | GRAVEL                                                                     |      |        |        | SAND   |        |      |    | FINE |    |    |    | SILT OR CLAY |    |    |    |
|------------|-------------|----------------------------------------------------------------------------|------|--------|--------|--------|--------|------|----|------|----|----|----|--------------|----|----|----|
|            |             | COARSE                                                                     | FINE | COARSE | MEDIUM | COARSE | MEDIUM | FINE | PL | LL   | PL | PI | PL | LL           | PI | PL | PI |
| 20         | 49.5 - 51.0 | Olive Gray, Clayey Sand, High Liquid Limit (SC-H), with a trace of gravel. |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Classification                                                             |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Nat w%                                                                     |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Specific Gravity = 2.713                                                   |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Project Savannah Harbor                                                    |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Harbor Expansion, Savannah, Georgia                                        |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Lab No. K6/63                                                              |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Boring No. SH417                                                           |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |
|            |             | Date 10/7/02                                                               |      |        |        |        |        |      |    |      |    |    |    |              |    |    |    |

Tests Conducted in General Accordance with ASTM D421, D422, D423, & D424

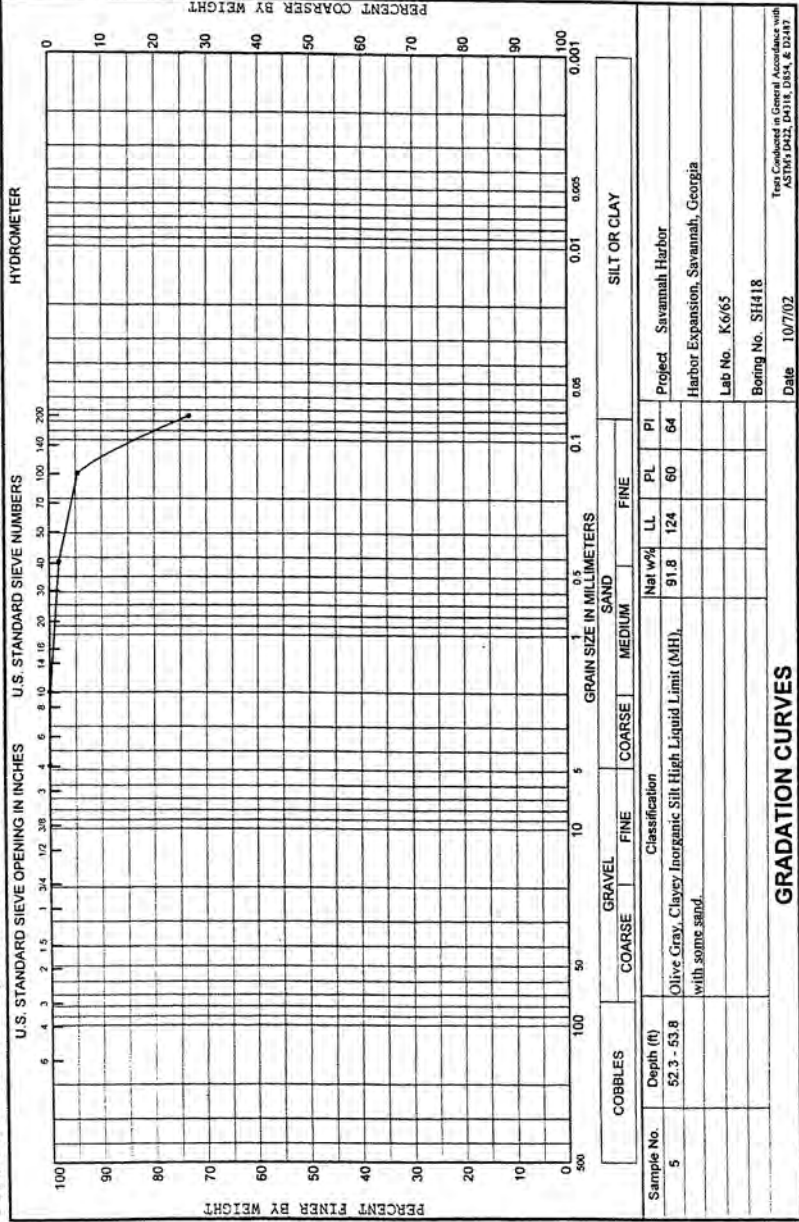




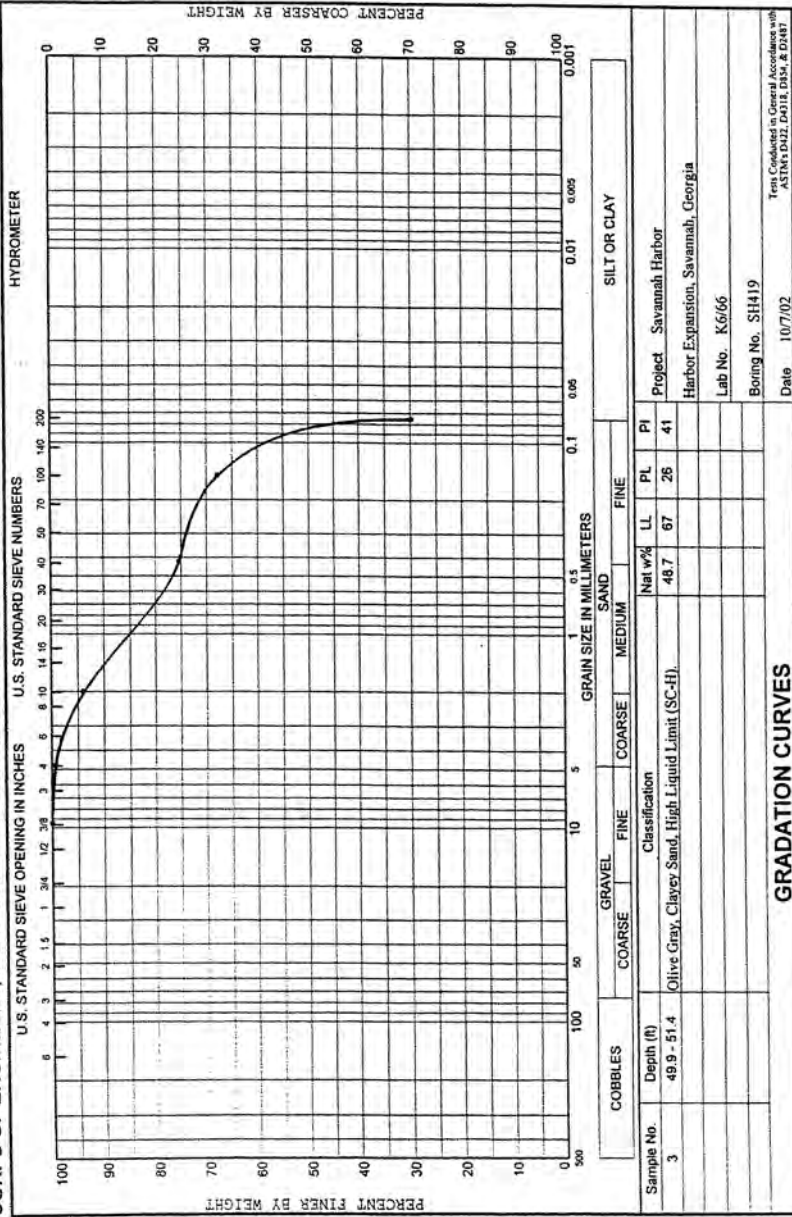
DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406

REQUISITION: W33JG22119420



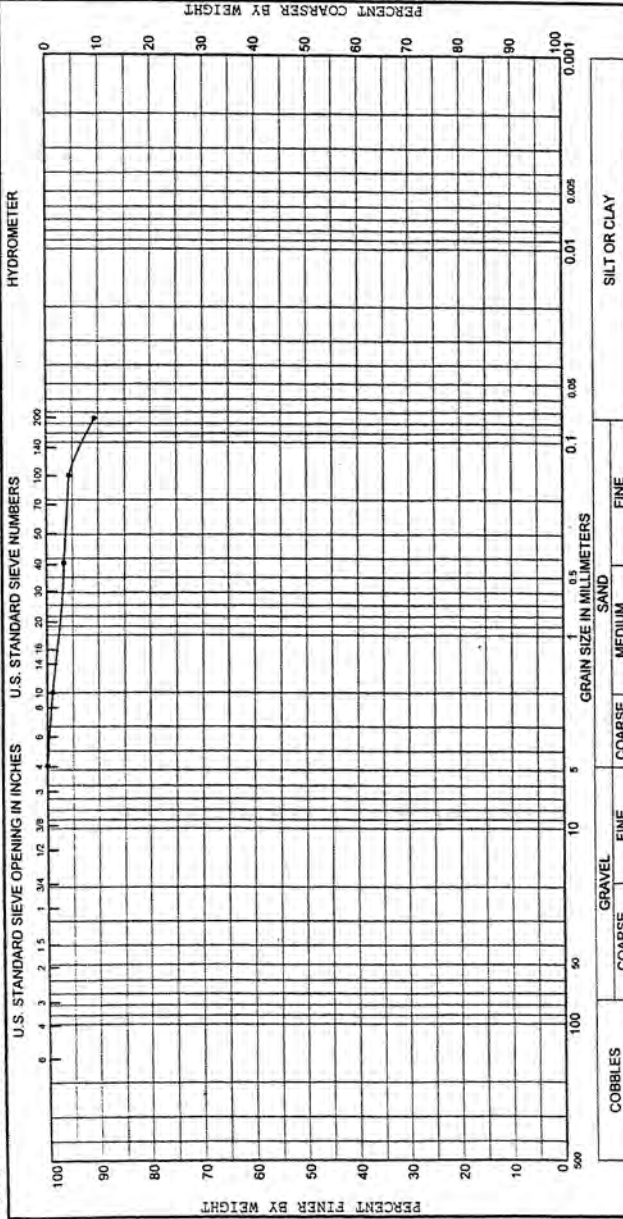
WORK ORDER: 240e  
REQUISITION: W33S



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2409

REQUESTION: W33SG22119420



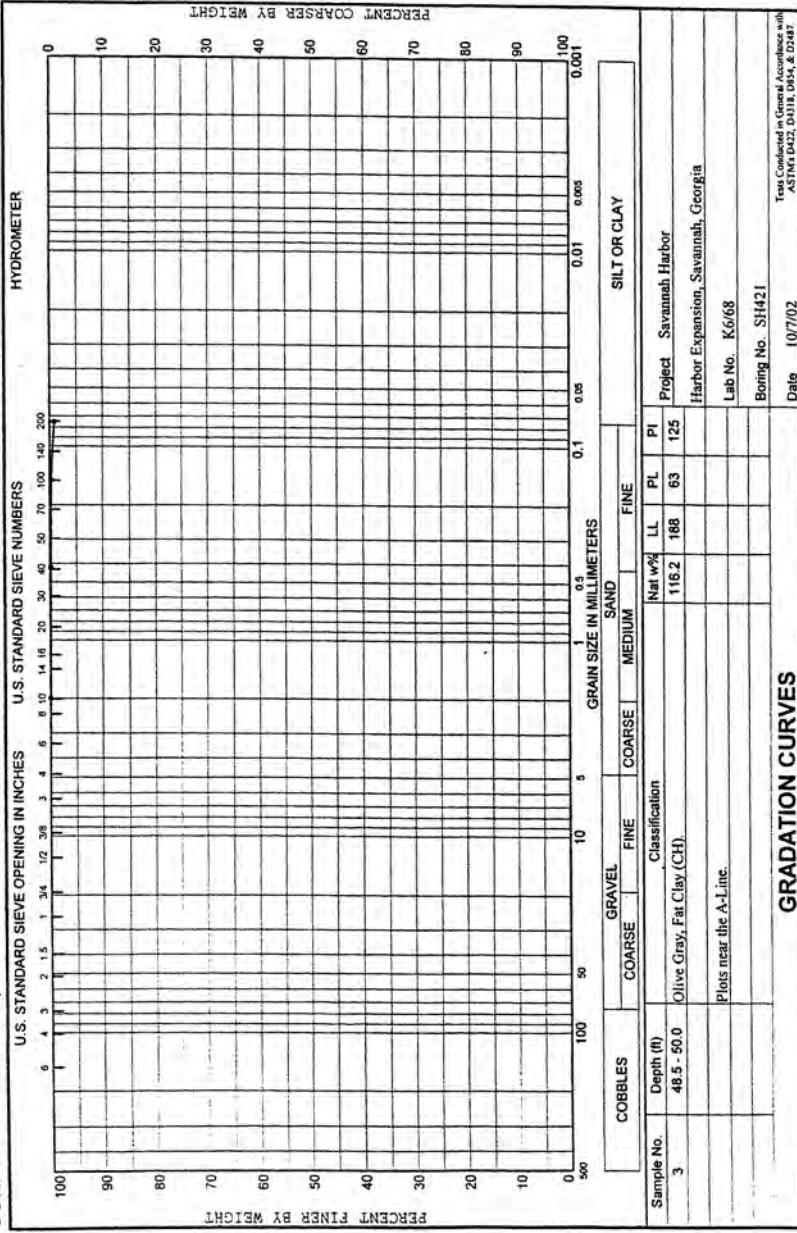
| Sample No. | Depth (ft)  | COARSE                                                                     |  |  | FINE           |  |  | SILT OR CLAY   |  |  | PI |  |  |
|------------|-------------|----------------------------------------------------------------------------|--|--|----------------|--|--|----------------|--|--|----|--|--|
|            |             | Classification                                                             |  |  | Classification |  |  | Classification |  |  | PI |  |  |
| 3          | 50.0 - 51.5 | Olive, Clayey Inorganic Silt High Liquid Limit (MH), with a trace of sand. |  |  | Nat w%         |  |  | LL             |  |  | PL |  |  |
|            |             |                                                                            |  |  | 88.7           |  |  | 168            |  |  | 78 |  |  |
|            |             |                                                                            |  |  |                |  |  |                |  |  |    |  |  |
|            |             |                                                                            |  |  |                |  |  |                |  |  |    |  |  |
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|            |             |                                                                            |  |  |                |  |  |                |  |  |    |  |  |



WORK ORDER: 2400

REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062



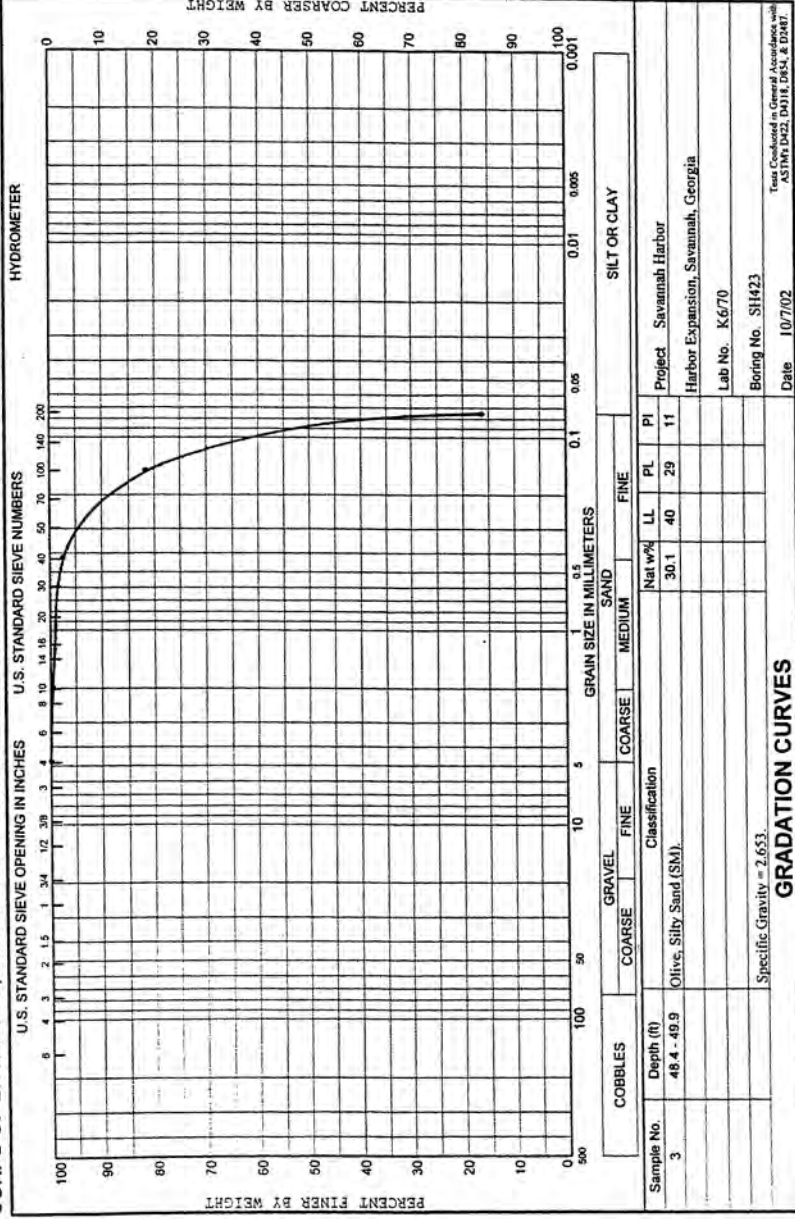






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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

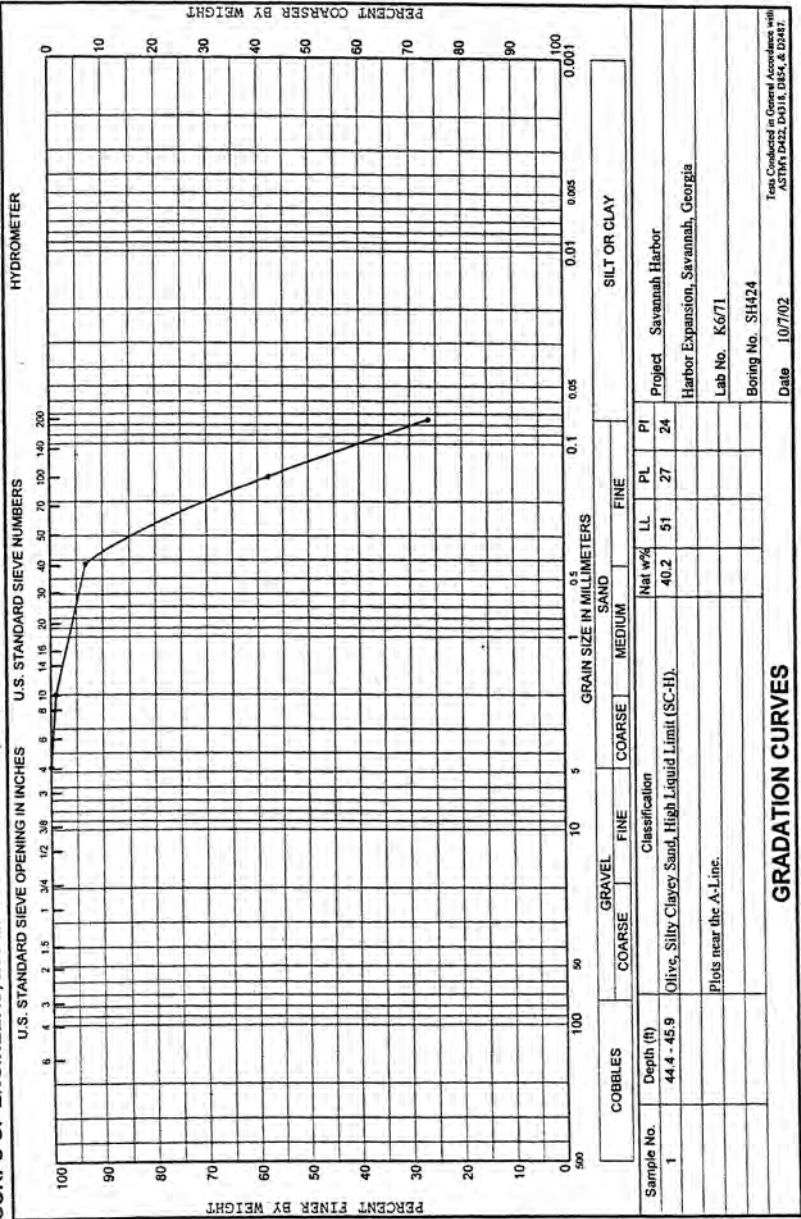
WORK ORDER: 240a  
REQUISITION: W338JG22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

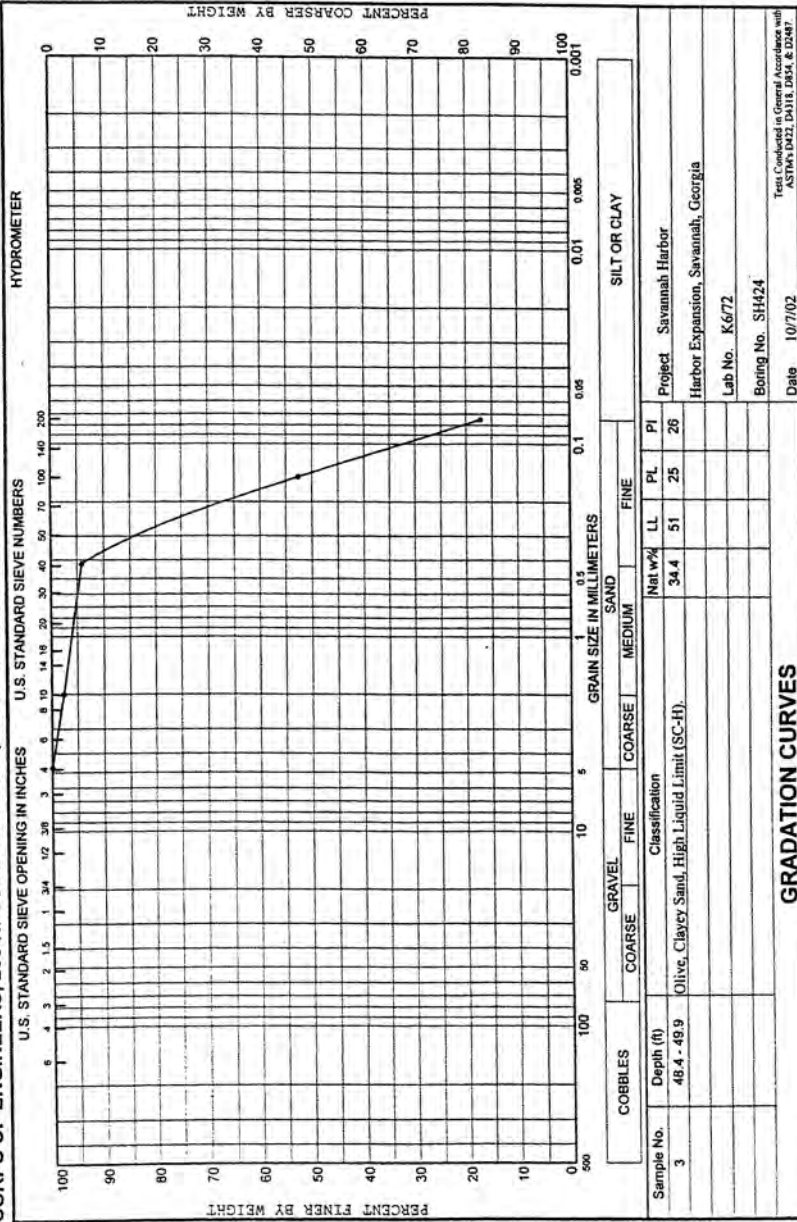
REQUISITION: W33SGJ22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

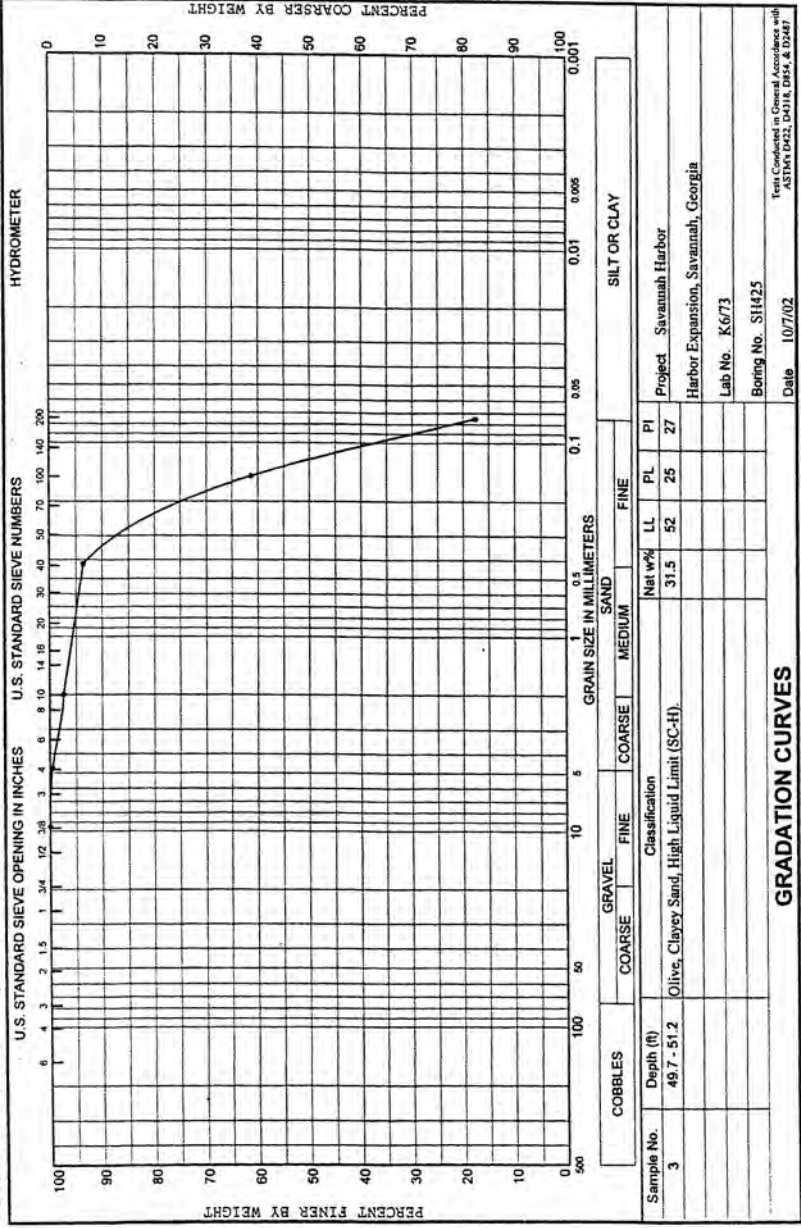
REQUISITION: W33SJG22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

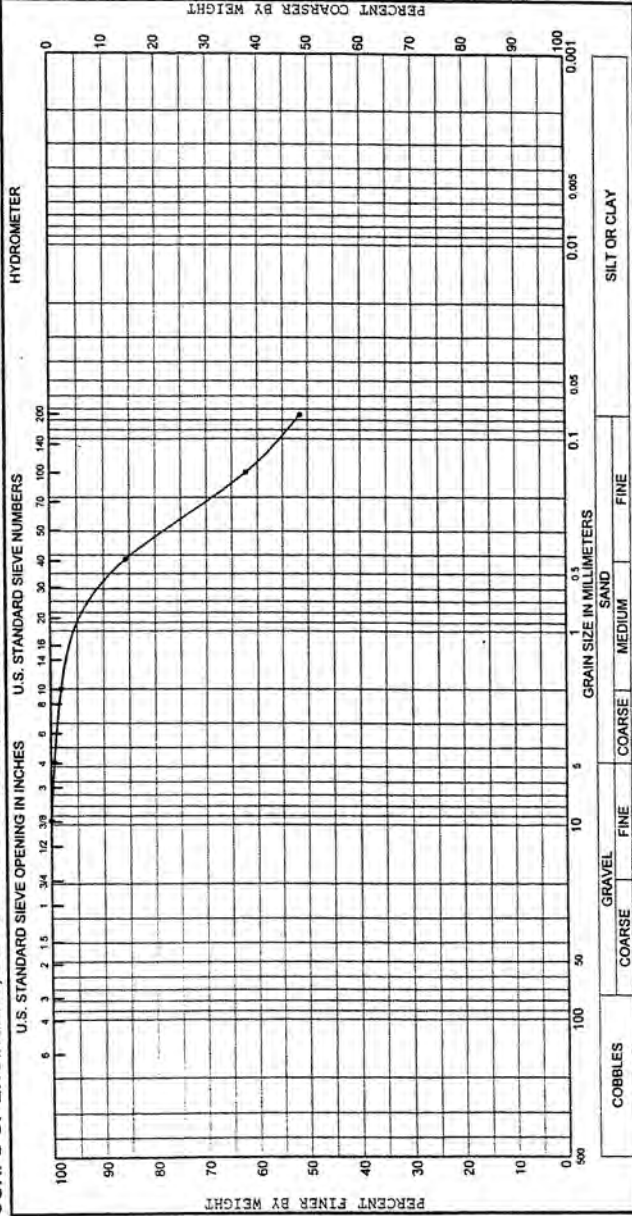
WORK ORDER: 240a

REQUISITION: W33SG22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e  
REQUISITION: W33SJG22119420

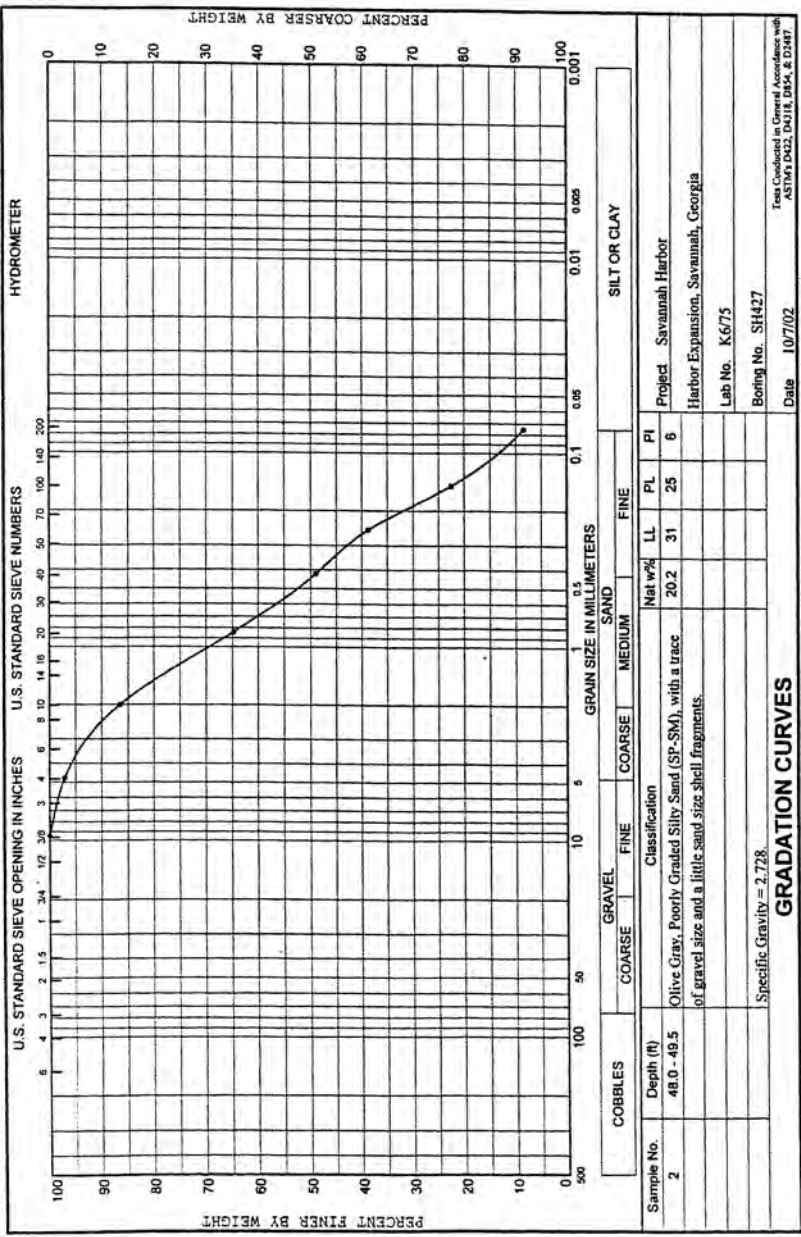


|                                                                           |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         |                                     |
|---------------------------------------------------------------------------|---|------------|-------------|----------------|----------------------------------------|--------|------|----|----|----|----|----|----|---------|-------------------------------------|
| Sample No.                                                                | 3 | Depth (ft) | 49.3 - 50.8 | Classification | Dark Gray & Olive, Sandy Fat Clay (CH) | Nat w% | 49.5 | LL | 71 | PL | 20 | PI | 51 | Project | Savannah Harbor                     |
|                                                                           |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         | Harbor Expansion, Savannah, Georgia |
|                                                                           |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         | Lab No. K674                        |
|                                                                           |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         | Boring No. SH426                    |
|                                                                           |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         | Date 10/7/02                        |
| GRADATION CURVES                                                          |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         |                                     |
| Tests Conducted in General Accordance with ASTM D422, D418, D514, & D447. |   |            |             |                |                                        |        |      |    |    |    |    |    |    |         |                                     |



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
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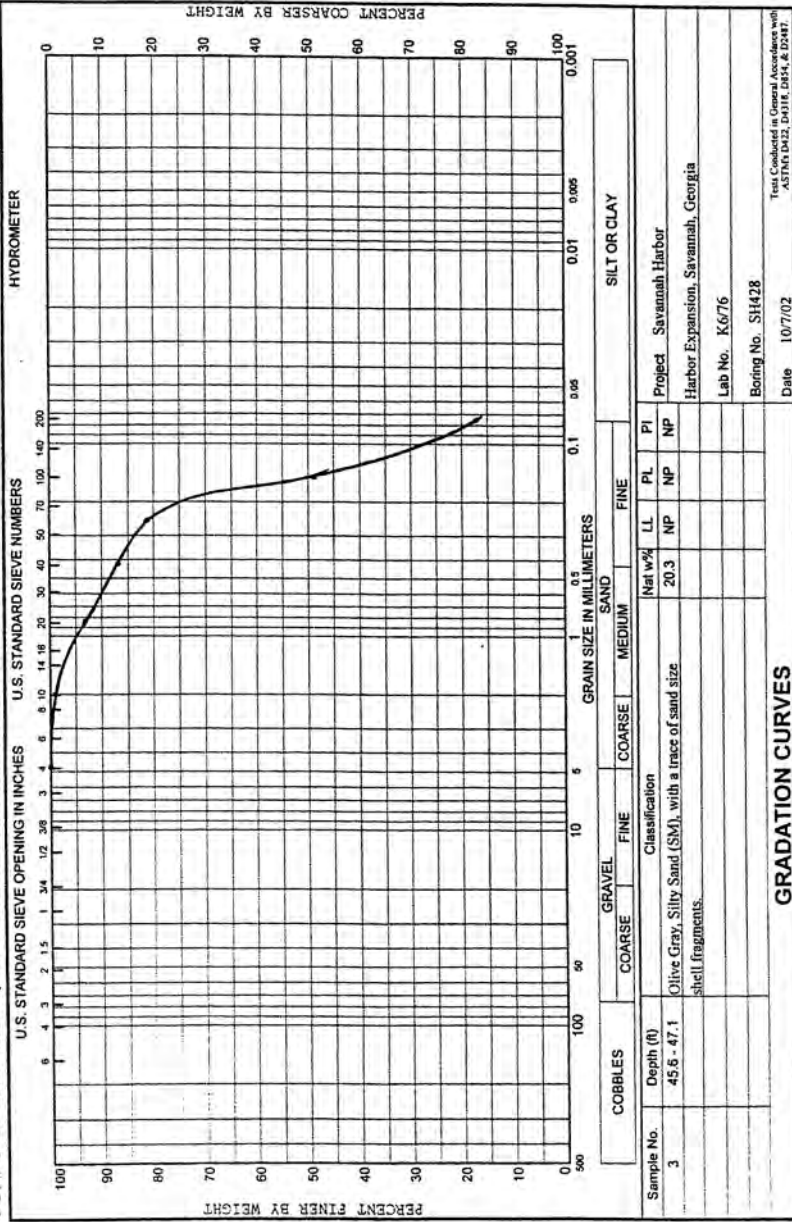
WORK ORDER: 240a  
REQUISITION: W338JG22119420



**WORK ORDER: 240a**

REQUISITION: W33SJG22119420

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062









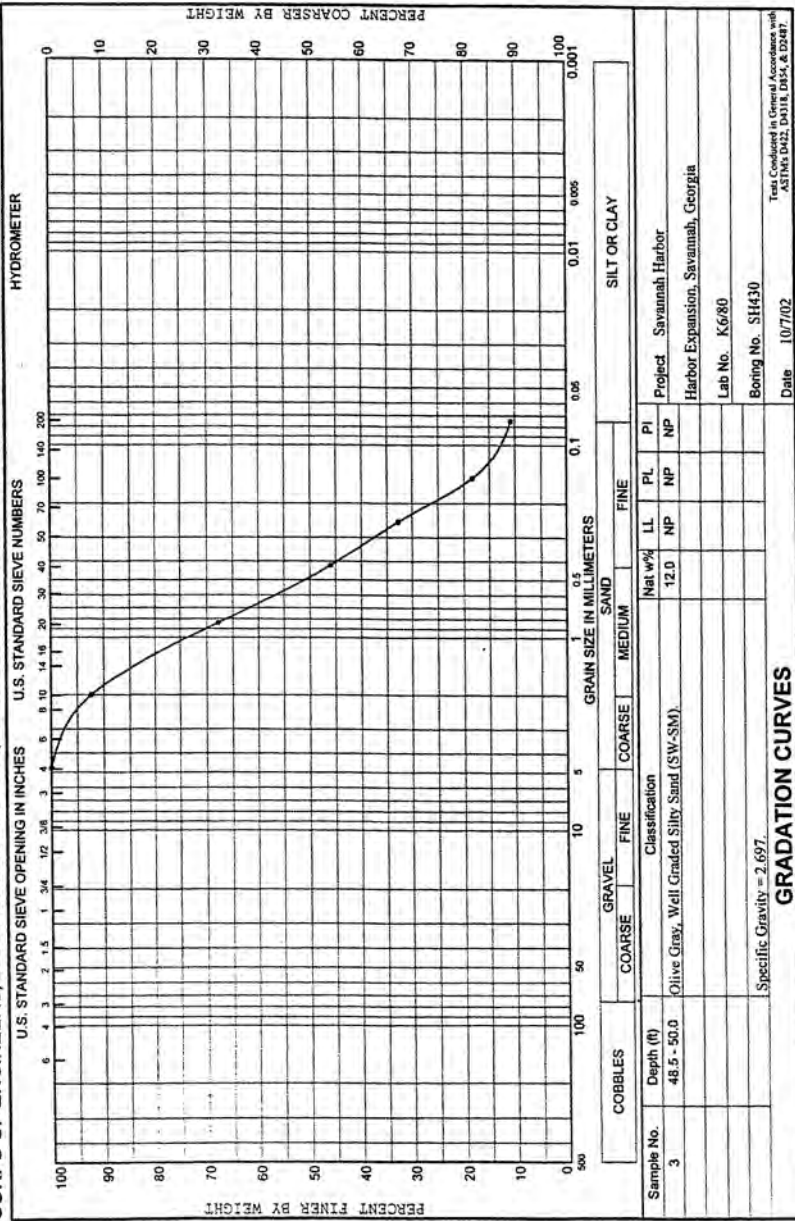




DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

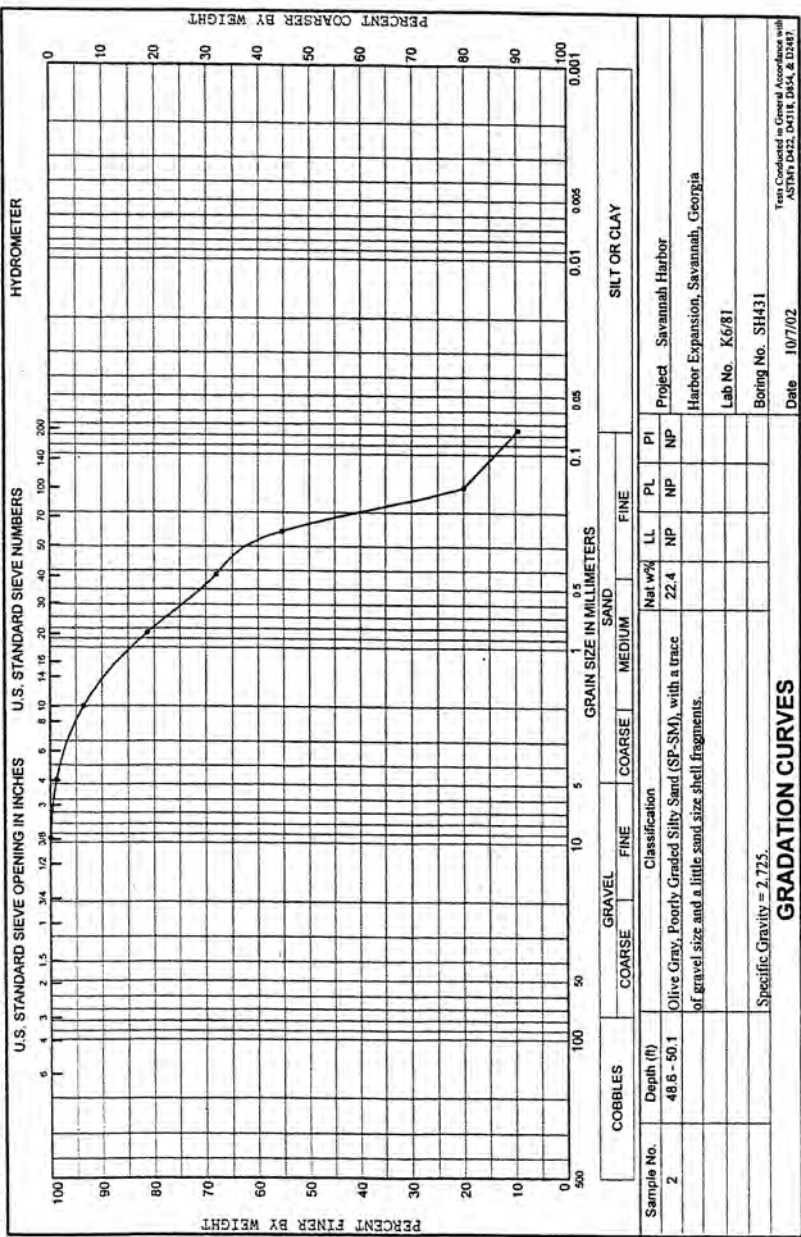
WORK ORDER: 2406

REQUISITION: W335JG22119420



DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406  
REQUESTION: W335JG22119420



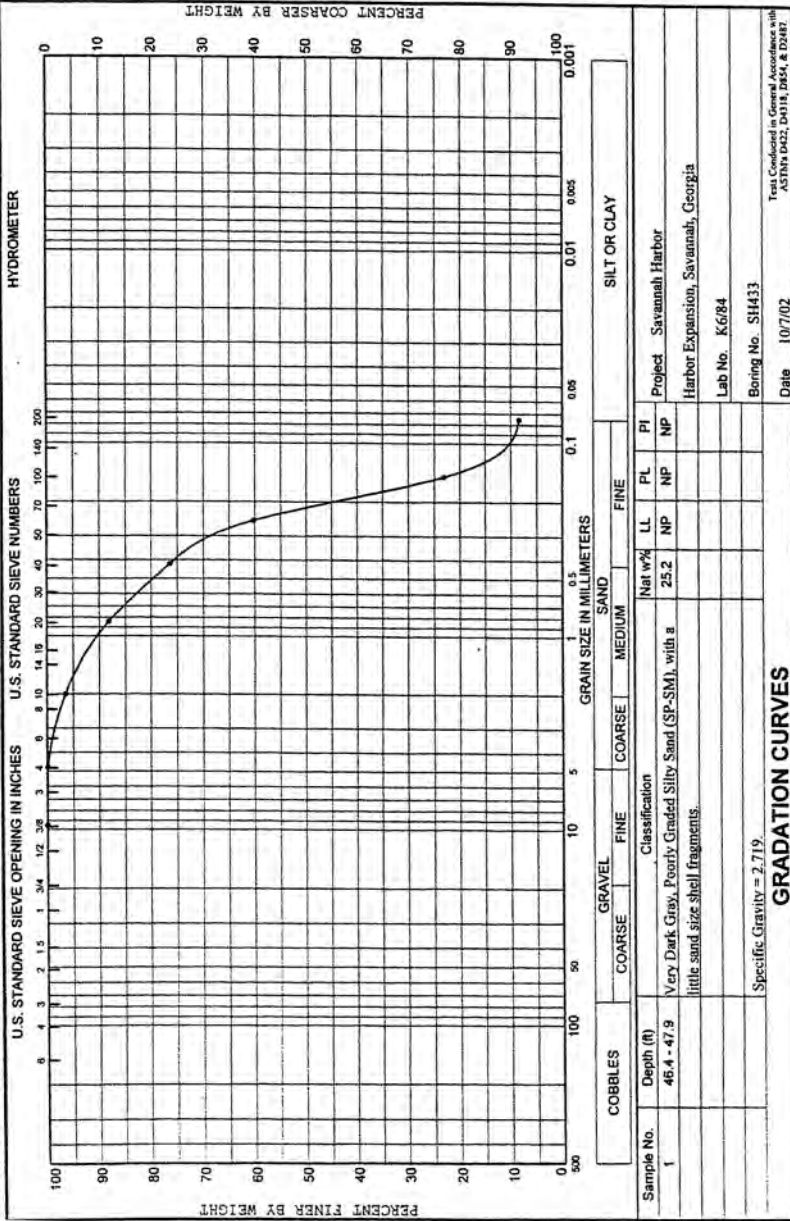




DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240e

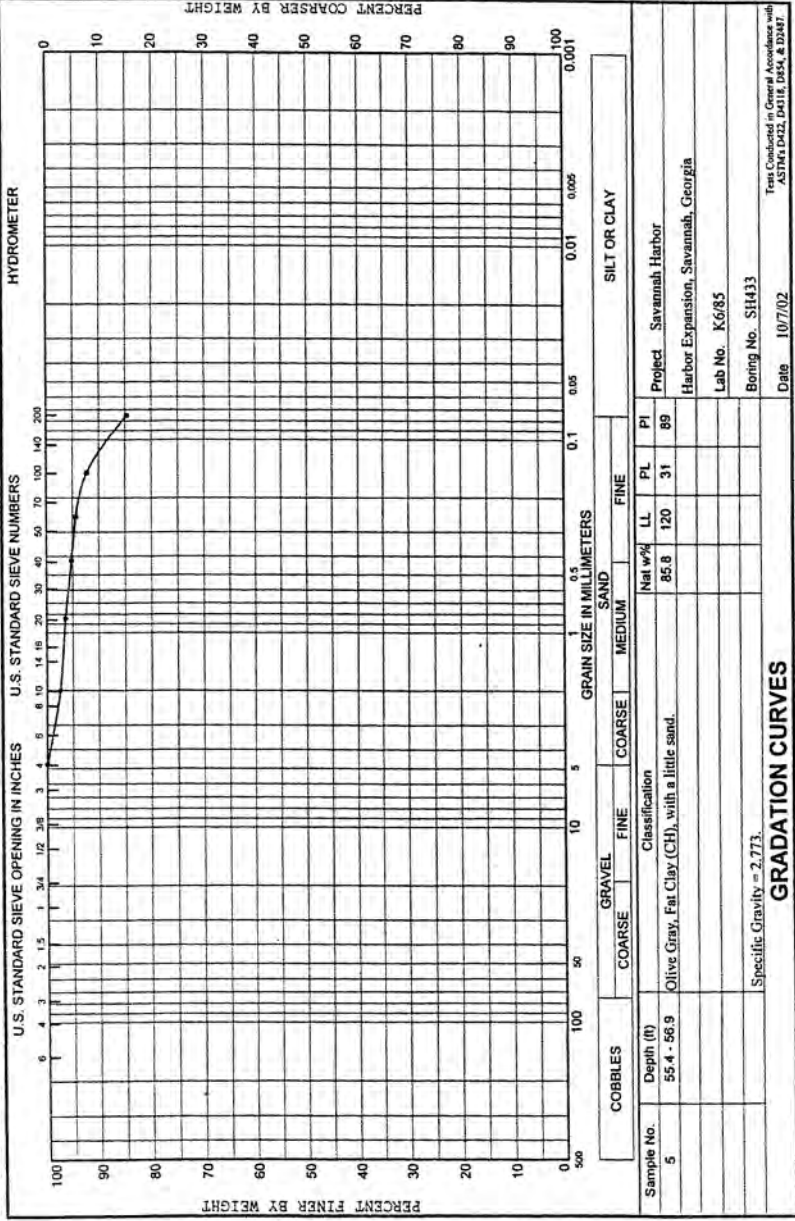
REQUESTION: W33SG22119420





DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL & MATERIALS UNIT  
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2400  
REQUISITION: W335JG22119420



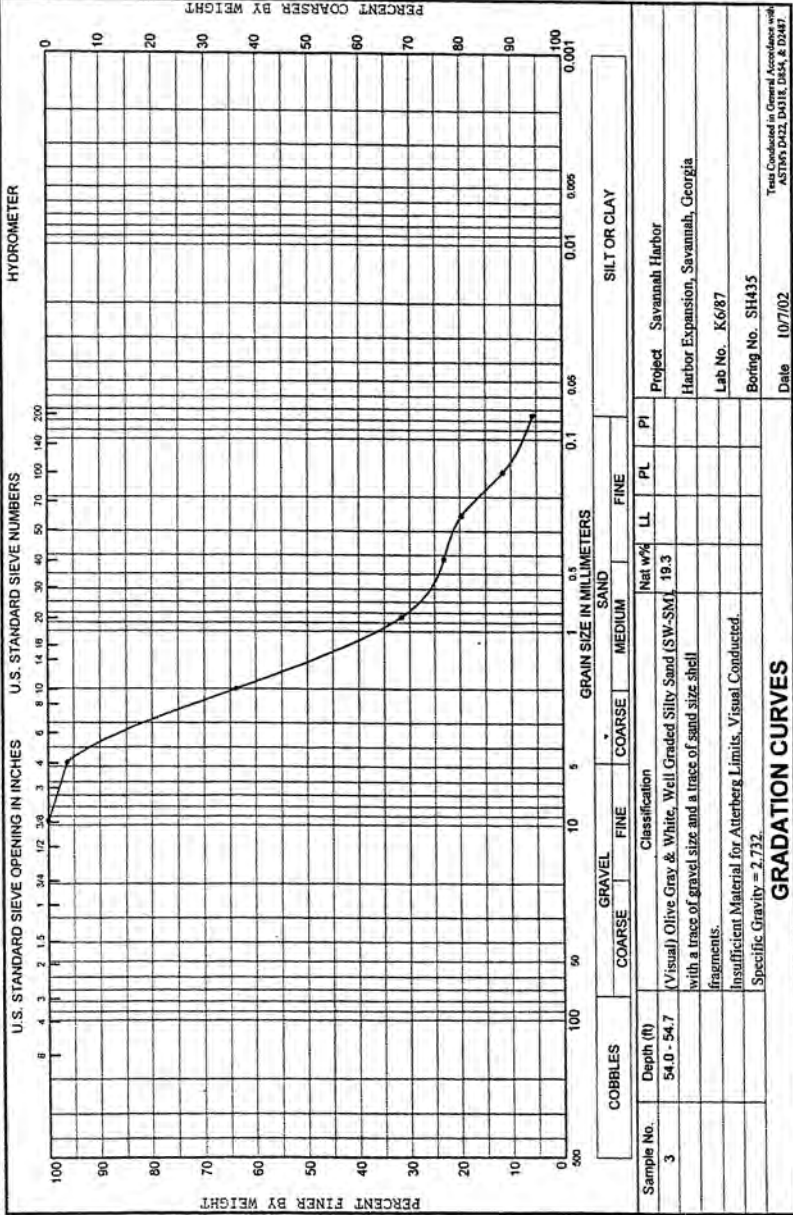




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WORK ORDER: 240e

REQUISITION: W335JG22119420

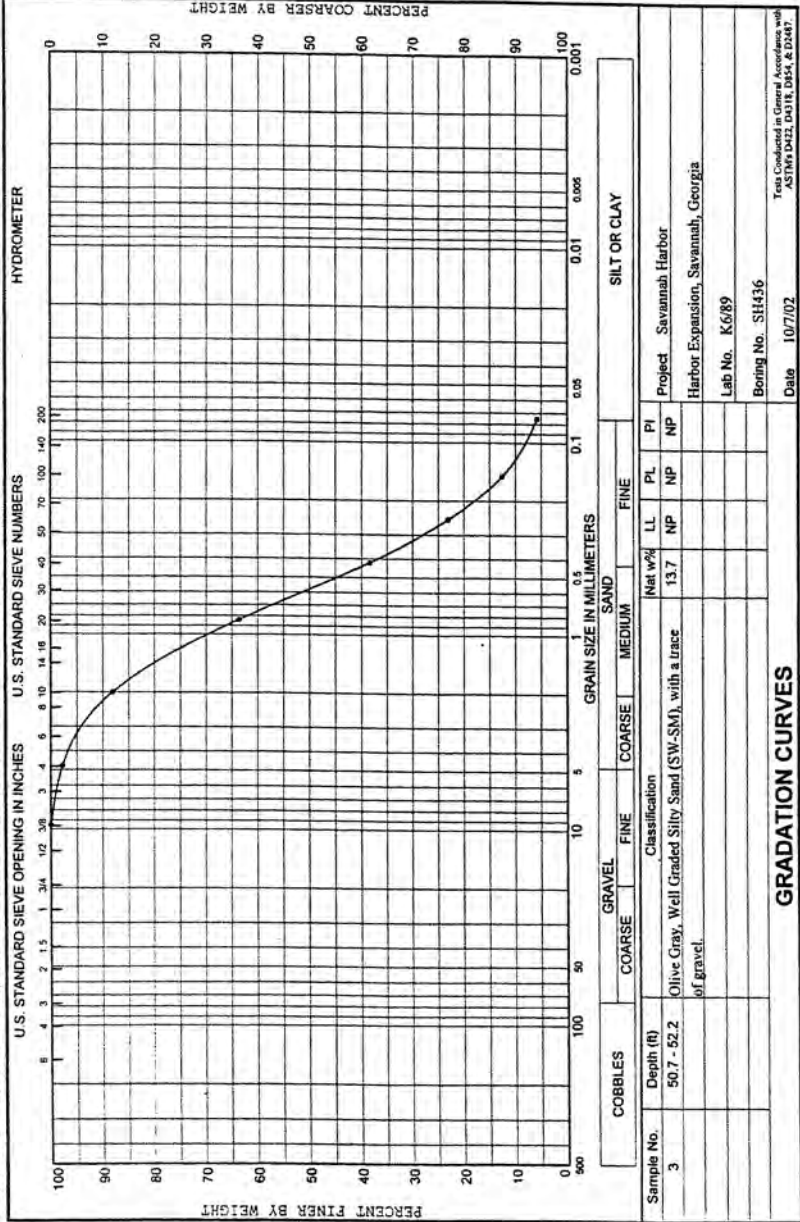




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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240

REQUISITION: W335JG22119420

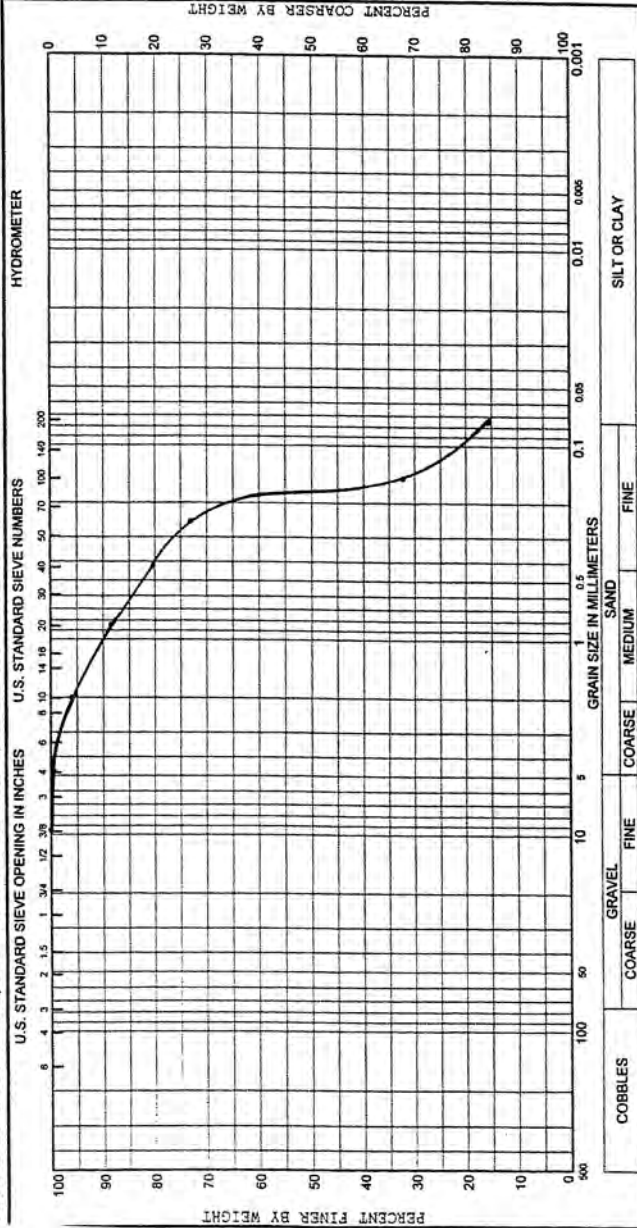






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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 240a  
REQUISITION: W338JG22119420



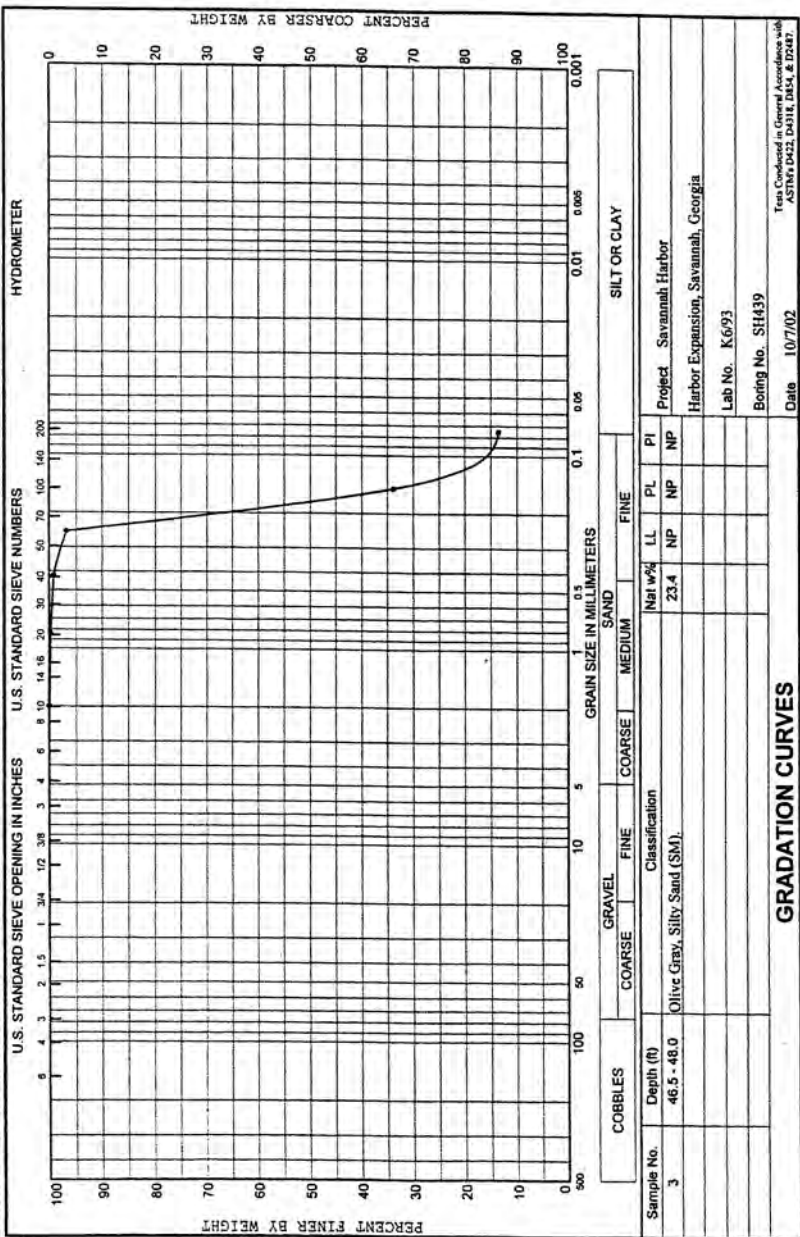
| Sample No.                                                                   | Depth (ft)  | Classification                                                    | Nat w% |    | LL | PL | PI | Project                             |
|------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------|--------|----|----|----|----|-------------------------------------|
|                                                                              |             |                                                                   | 31.8   | NP |    |    |    |                                     |
| 1                                                                            | 43.5 - 45.0 | Gray, Silty Sand (SM), with a trace of sand size shell fragments. |        |    |    |    |    | Savannah Harbor                     |
|                                                                              |             |                                                                   |        |    |    |    |    | Harbor Expansion, Savannah, Georgia |
|                                                                              |             |                                                                   |        |    |    |    |    | Lab No. K692                        |
|                                                                              |             |                                                                   |        |    |    |    |    | Boring No. SH439                    |
| GRADATION CURVES                                                             |             |                                                                   |        |    |    |    |    |                                     |
| Tests Conducted in General Accordance with<br>ASTM D422, D421, D424, & D2487 |             |                                                                   |        |    |    |    |    |                                     |
| Date 10/7/02                                                                 |             |                                                                   |        |    |    |    |    |                                     |



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WORK ORDER: 240\*

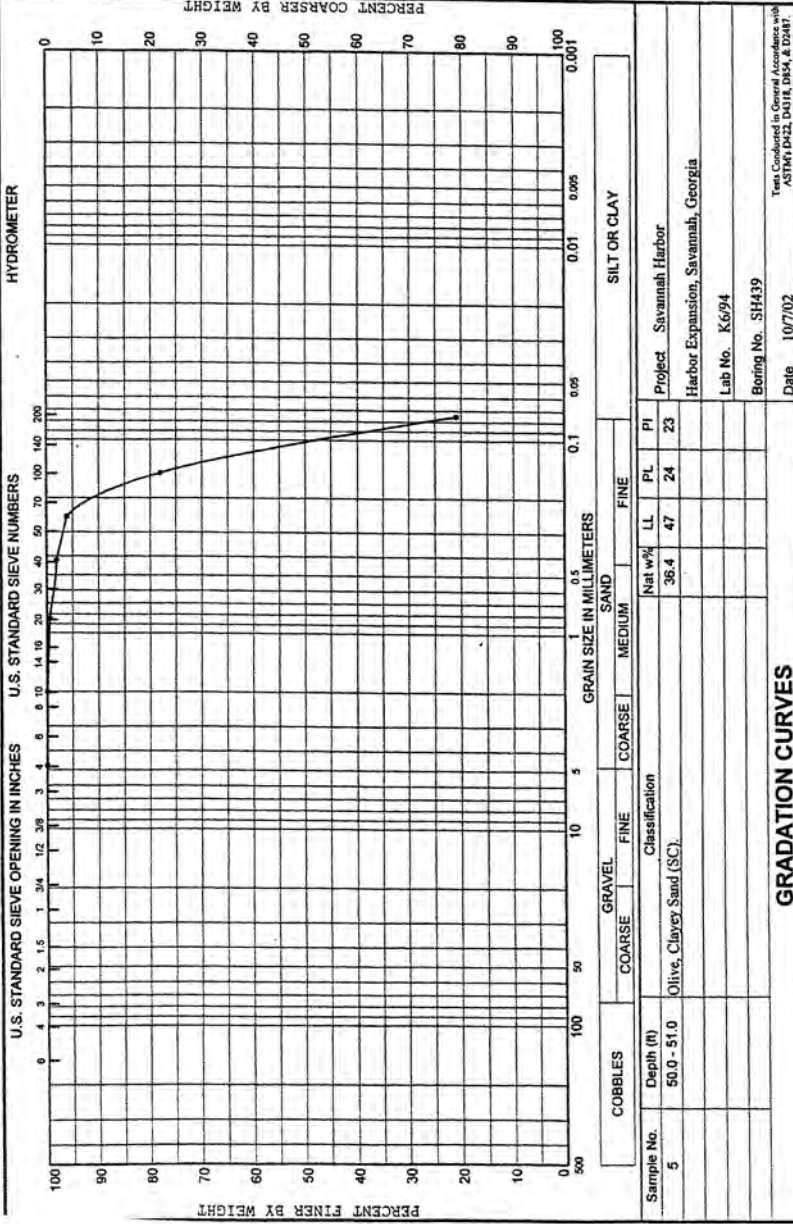
REQUISITION: W335JG22119420





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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

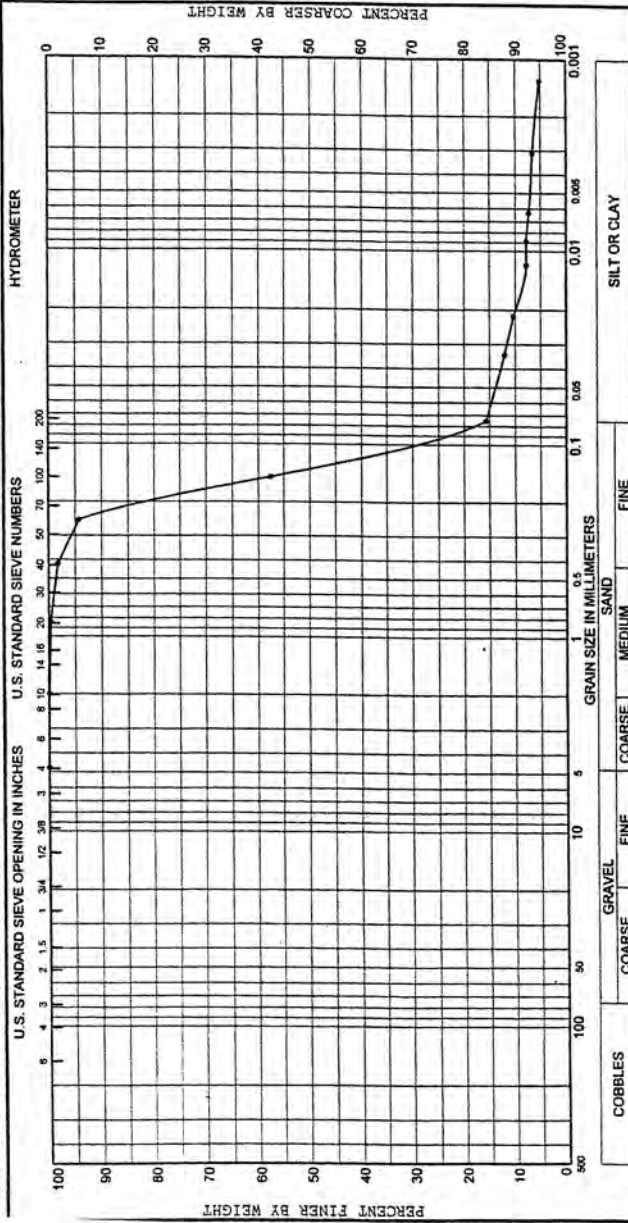
WORK ORDER: 240e  
REQUISITION: W338JG22119420





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REQUISITION: W338JG22119420



| Sample No. | Depth (ft)  | Classification                             | Nat Wt% | LL | PL | PI | Project                             |
|------------|-------------|--------------------------------------------|---------|----|----|----|-------------------------------------|
| 6          | 53.0 - 54.5 | (Visual) Dark Gray, Well Graded Sand (SW). | 27.5    |    |    |    | Savannah Harbor                     |
|            |             |                                            |         |    |    |    | Harbor Expansion, Savannah, Georgia |
|            |             |                                            |         |    |    |    | Lab No. K6/96                       |
|            |             |                                            |         |    |    |    | Boring No. SH441                    |

Test Conducted in General Accordance with  
ASTM'S D432, D418, D54, & D2497

Date 10/7/02

**GRADATION CURVES**

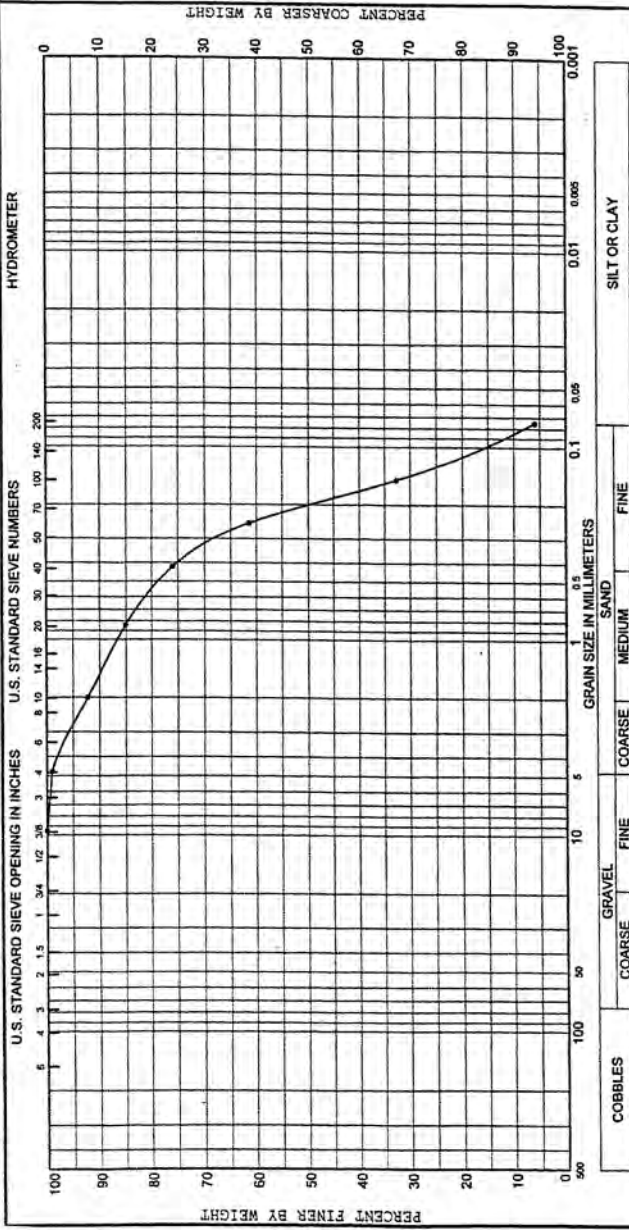




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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406

REQUISITION: W33SGJ22119420



| Sample No.       | Depth (ft)  | Classification                                                                                                                                     | Net % | LL | PL | PI | Project                                                                        |
|------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------|----|----|----|--------------------------------------------------------------------------------|
| 6                | 56.4 - 57.9 | Dark Olive Gray & White, Poorly Graded Silty Sand (SP-SM),<br>with a trace of gravel size and sand size shell fragments.<br>Plots near the A-Line. | 20.7  | 34 | 24 | 10 | Savannah Harbor                                                                |
|                  |             |                                                                                                                                                    |       |    |    |    | Harbor Expansion, Savannah, Georgia                                            |
|                  |             |                                                                                                                                                    |       |    |    |    | Lab No. K6/98                                                                  |
|                  |             |                                                                                                                                                    |       |    |    |    | Boring No. SH442                                                               |
| GRADATION CURVES |             |                                                                                                                                                    |       |    |    |    | Tests Conducted in General Accordance with<br>ASTM's D422, D418, D554, & D2047 |
|                  |             |                                                                                                                                                    |       |    |    |    | Date 10/7/02                                                                   |

Test Conducted in General Accordance with ASTM D422, D4218, D584, & D5497

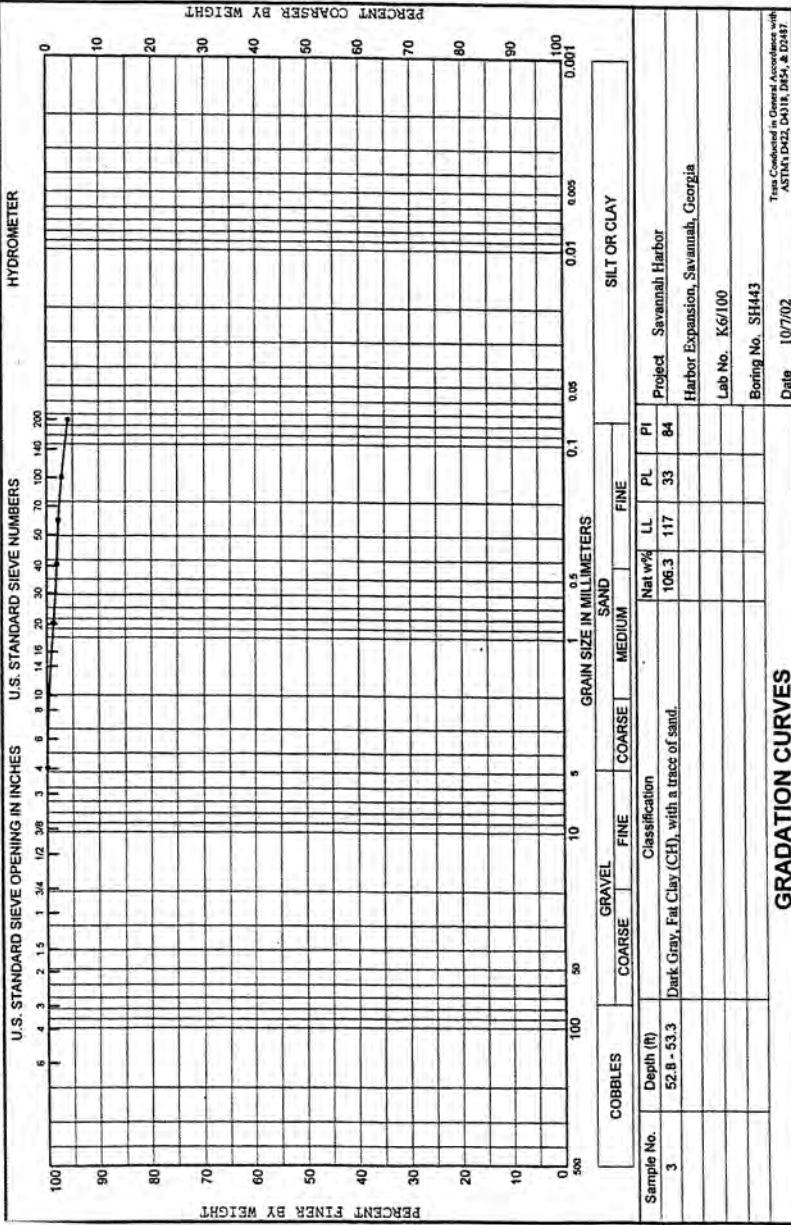




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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA 30062

WORK ORDER: 2406

REQUISITION: W338JG22119420









APPENDIX C

SAVANNAH HARBOR

RESULTS OF  
RADIOLOGICAL  
SCREENING

| CESAS-EN-GGe                                                                                          |               |            |                                   | 4-Oct-02            |
|-------------------------------------------------------------------------------------------------------|---------------|------------|-----------------------------------|---------------------|
| <b>US Army Corps of Engineers</b><br><b>Environmental &amp; Materials Unit</b><br><b>Marietta, GA</b> |               |            |                                   |                     |
| <b>Table 2 - Radiation Screening</b>                                                                  |               |            |                                   |                     |
| Lab Number                                                                                            | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color               |
| K6/45                                                                                                 | SH413         | 1          | ≤ 0.02                            | Dark Grayish Brown  |
|                                                                                                       | SH413         | 2          | ≤ 0.02                            |                     |
| K6/46                                                                                                 | SH413         | 4          | ≤ 0.03                            | Dark Gray           |
| K6/47                                                                                                 | SH413         | 5          | ≤ 0.03                            | Olive Gray          |
|                                                                                                       | SH413         | 7          | ≤ 0.04                            |                     |
| K6/48                                                                                                 | SH413         | 10         | ≤ 0.03                            | Olive               |
|                                                                                                       | SH413         | 12         | ≤ 0.04                            |                     |
|                                                                                                       | SH413         | 14         | ≤ 0.03                            |                     |
|                                                                                                       | SH413         | 16         | ≤ 0.03                            |                     |
|                                                                                                       | SH414         | 1          | ≤ 0.02                            |                     |
| K6/49                                                                                                 | SH414         | 3          | ≤ 0.02                            | Light Brownish Gray |
|                                                                                                       | SH414         | 5          | ≤ 0.03                            |                     |
| K6/50                                                                                                 | SH414         | 8          | ≤ 0.02                            | Dark Gray           |
| K6/51                                                                                                 | SH414         | 9          | ≤ 0.03                            | Olive Gray          |
| K6/52                                                                                                 | SH414         | 12         | ≤ 0.02                            | Grayish Brown       |
| K6/53                                                                                                 | SH414         | 15         | ≤ 0.03                            | Dark Grayish Brown  |
|                                                                                                       | SH414         | 18         | ≤ 0.04                            |                     |
|                                                                                                       | SH414         | 22         | ≤ 0.02                            |                     |
|                                                                                                       | SH415         | 1          | ≤ 0.02                            |                     |
| K6/54                                                                                                 | SH415         | 4          | ≤ 0.03                            | Brown               |
| K6/55                                                                                                 | SH415         | 7          | ≤ 0.02                            | Gray                |
|                                                                                                       | SH415         | 9          | ≤ 0.03                            |                     |
| K6/56                                                                                                 | SH415         | 11         | ≤ 0.02                            | Grayish Brown       |
| K6/57                                                                                                 | SH415         | 14         | ≤ 0.02                            | Dark Grayish Brown  |
|                                                                                                       | SH415         | 16         | ≤ 0.02                            |                     |
| K6/58                                                                                                 | SH415         | 18         | ≤ 0.02                            | Grayish Brown       |
|                                                                                                       | SH415         | 21         | ≤ 0.03                            |                     |
|                                                                                                       | SH415         | 24         | ≤ 0.02                            |                     |
|                                                                                                       | SH416         | 1          | ≤ 0.02                            |                     |

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

CESAS-EN-GGe

4-Oct-02

US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA

Table 2 - Radiation Screening

| Lab Number | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color                 |
|------------|---------------|------------|-----------------------------------|-----------------------|
| K6/59      | SH416         | 4          | ≤ 0.03                            | Light Yellowish Brown |
|            | SH416         | 7          | ≤ 0.03                            |                       |
| K6/60      | SH416         | 9          | ≤ 0.03                            | Olive Gray            |
| K6/61      | SH416         | 12         | ≤ 0.03                            | Olive Gray            |
|            | SH416         | 15         | ≤ 0.02                            |                       |
|            | SH416         | 17         | ≤ 0.03                            |                       |
|            | SH417         | 1          | ≤ 0.03                            |                       |
|            | SH417         | 4          | ≤ 0.03                            |                       |
| K6/62      | SH417         | 7          | ≤ 0.02                            | Grayish Brown         |
|            | SH417         | 10         | ≤ 0.03                            |                       |
|            | SH417         | 12         | ≤ 0.03                            |                       |
|            | SH417         | 15         | ≤ 0.02                            |                       |
|            | SH417         | 18         | ≤ 0.02                            |                       |
| K6/63      | SH417         | 20         | ≤ 0.02                            | Olive Gray            |
|            | SH417         | 22         | ≤ 0.03                            |                       |
|            | SH417         | 24         | ≤ 0.02                            |                       |
| K6/64      | SH418         | 2          | ≤ 0.02                            | Black                 |
| K6/65      | SH418         | 5          | ≤ 0.03                            | Olive Gray            |
|            | SH418         | 7          | ≤ 0.04                            |                       |
|            | SH418         | 10         | ≤ 0.03                            |                       |
|            | SH419         | 1          | ≤ 0.02                            |                       |
| K6/66      | SH419         | 3          | ≤ 0.03                            | Olive Gray            |
|            | SH419         | 5          | ≤ 0.04                            |                       |
|            | SH419         | 7          | ≤ 0.03                            |                       |
|            | SH419         | 9          | ≤ 0.03                            |                       |
|            | SH420         | 1          | ≤ 0.04                            |                       |
| K6/67      | SH420         | 3          | ≤ 0.03                            | Olive                 |
|            | SH420         | 5          | ≤ 0.03                            |                       |
|            | SH420         | 7          | ≤ 0.03                            |                       |

Note<sup>1</sup>: Readings are reported as the highest value in mRem/hour from a Bicorn Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

CESAS-EN-GGe

4-Oct-02

US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA

Table 2 - Radiation Screening

| Lab Number | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color             |
|------------|---------------|------------|-----------------------------------|-------------------|
|            | SH420         | 9          | ≤ 0.04                            |                   |
|            | SH421         | 1          | ≤ 0.04                            |                   |
| K6/68      | SH421         | 3          | ≤ 0.04                            | Olive Gray        |
|            | SH421         | 5          | ≤ 0.02                            |                   |
|            | SH421         | 7          | ≤ 0.03                            |                   |
|            | SH421         | 9          | ≤ 0.03                            |                   |
|            | SH422         | 1          | ≤ 0.03                            |                   |
| K6/69      | SH422         | 3          | ≤ 0.04                            | Dark Olive Gray   |
|            | SH422         | 5          | ≤ 0.03                            |                   |
|            | SH422         | 7          | ≤ 0.04                            |                   |
|            | SH422         | 9          | ≤ 0.04                            |                   |
|            | SH423         | 1          | ≤ 0.03                            |                   |
| K6/70      | SH423         | 3          | ≤ 0.03                            | Olive             |
|            | SH423         | 5          | ≤ 0.03                            |                   |
|            | SH423         | 7          | ≤ 0.02                            |                   |
|            | SH423         | 9          | ≤ 0.04                            |                   |
| K6/71      | SH424         | 1          | ≤ 0.04                            | Olive             |
| K6/72      | SH424         | 3          | ≤ 0.04                            | Olive             |
|            | SH424         | 5          | ≤ 0.03                            |                   |
|            | SH424         | 7          | ≤ 0.03                            |                   |
|            | SH424         | 9          | ≤ 0.03                            |                   |
|            | SH425         | 1          | ≤ 0.03                            |                   |
| K6/73      | SH425         | 3          | ≤ 0.03                            | Olive             |
|            | SH425         | 5          | ≤ 0.03                            |                   |
|            | SH425         | 7          | ≤ 0.03                            |                   |
|            | SH425         | 9          | ≤ 0.03                            |                   |
| K6/74      | SH426         | 3          | ≤ 0.02                            | Dark Gray & Olive |
|            | SH426         | 5          | ≤ 0.03                            |                   |
|            | SH426         | 7          | ≤ 0.03                            |                   |

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

CESAS-EN-GGe

4-Oct-02

US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA

Table 2 - Radiation Screening

| Lab Number | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color                  |
|------------|---------------|------------|-----------------------------------|------------------------|
|            | SH426         | 9          | ≤ 0.03                            |                        |
|            | SH426         | 11         | ≤ 0.03                            |                        |
|            | SH426         | 13         | ≤ 0.03                            |                        |
| K6/75      | SH427         | 2          | ≤ 0.03                            | Olive Gray             |
|            | SH427         | 4          | ≤ 0.02                            |                        |
|            | SH427         | 6          | ≤ 0.02                            |                        |
|            | SH427         | 8          | ≤ 0.03                            |                        |
|            | SH428         | 1          | ≤ 0.02                            |                        |
| K6/76      | SH428         | 3          | ≤ 0.02                            | Olive Gray             |
| K6/77      | SH428         | 4          | ≤ 0.02                            | Olive Gray             |
|            | SH428         | 6          | ≤ 0.02                            |                        |
|            | SH428         | 8          | ≤ 0.02                            |                        |
|            | SH428         | 10         | ≤ 0.03                            |                        |
|            | SH428         | 12         | ≤ 0.02                            |                        |
|            | SH428         | 14         | ≤ 0.02                            |                        |
| K6/78      | SH429         | 2          | ≤ 0.03                            | Dark Gray & Olive Gray |
| K6/79      | SH429         | 4          | ≤ 0.03                            | Olive                  |
|            | SH429         | 6          | ≤ 0.02                            |                        |
|            | SH429         | 8          | ≤ 0.02                            |                        |
|            | SH429         | 10         | ≤ 0.02                            |                        |
| K6/80      | SH430         | 3          | ≤ 0.02                            | Olive Gray             |
|            | SH430         | 6          | ≤ 0.02                            |                        |
|            | SH430         | 9          | ≤ 0.02                            |                        |
|            | SH430         | 12         | ≤ 0.02                            |                        |
|            | SH430         | 14         | ≤ 0.02                            |                        |
|            | SH430         | 16         | ≤ 0.02                            |                        |
| K6/81      | SH431         | 2          | ≤ 0.03                            | Olive Gray             |
|            | SH431         | 4          | ≤ 0.02                            |                        |
|            | SH431         | 6          | ≤ 0.02                            |                        |

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

| CESAS-EN-GGe                                                                 |               |            |                                   | 4-Oct-02           |
|------------------------------------------------------------------------------|---------------|------------|-----------------------------------|--------------------|
| US Army Corps of Engineers<br>Environmental & Materials Unit<br>Marietta, GA |               |            |                                   |                    |
| Table 2 - Radiation Screening                                                |               |            |                                   |                    |
| Lab Number                                                                   | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color              |
| K6/82                                                                        | SH431         | 9          | ≤ 0.02                            | Olive Gray         |
|                                                                              | SH431         | 12         | ≤ 0.03                            |                    |
| K6/83                                                                        | SH432         | 2          | ≤ 0.02                            | Olive Gray         |
|                                                                              | SH432         | 4          | ≤ 0.02                            |                    |
|                                                                              | SH432         | 6          | ≤ 0.02                            |                    |
|                                                                              | SH432         | 8          | ≤ 0.03                            |                    |
|                                                                              | SH432         | 10         | ≤ 0.02                            |                    |
|                                                                              | SH432         | 12         | ≤ 0.03                            |                    |
|                                                                              | SH432         | 14         | ≤ 0.03                            |                    |
| K6/84                                                                        | SH433         | 1          | ≤ 0.02                            | Very Dark Gray     |
|                                                                              | SH433         | 3          | ≤ 0.03                            |                    |
| K6/85                                                                        | SH433         | 5          | ≤ 0.02                            | Olive Gray         |
|                                                                              | SH433         | 7          | ≤ 0.03                            |                    |
| K6/86                                                                        | SH434         | 1          | ≤ 0.03                            | Dark Olive Gray    |
|                                                                              | SH434         | 3          | ≤ 0.03                            |                    |
|                                                                              | SH434         | 5          | ≤ 0.03                            |                    |
|                                                                              | SH434         | 7          | ≤ 0.03                            |                    |
|                                                                              | SH435         | 1          | ≤ 0.03                            |                    |
| K6/87                                                                        | SH435         | 3          | ≤ 0.03                            | Olive Gray & White |
|                                                                              | SH435         | 5          | ≤ 0.03                            |                    |
|                                                                              | SH435         | 7          | ≤ 0.03                            |                    |
|                                                                              | SH435         | 9          | ≤ 0.03                            |                    |
| K6/88                                                                        | SH436         | 1          | ≤ 0.04                            | Olive Gray         |
| K6/89                                                                        | SH436         | 3          | ≤ 0.03                            | Olive Gray         |
|                                                                              | SH436         | 5          | ≤ 0.03                            |                    |
|                                                                              | SH436         | 7          | ≤ 0.04                            |                    |
|                                                                              | SH436         | 9          | ≤ 0.04                            |                    |
| K6/90                                                                        | SH437         | 1          | ≤ 0.03                            | Olive Gray         |
|                                                                              | SH437         | 3          | ≤ 0.03                            |                    |

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicron Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

| CESAS-EN-GGe                                                                 |               |            | 4-Oct-02                          |                 |
|------------------------------------------------------------------------------|---------------|------------|-----------------------------------|-----------------|
| US Army Corps of Engineers<br>Environmental & Materials Unit<br>Marietta, GA |               |            |                                   |                 |
| Table 2 - Radiation Screening                                                |               |            |                                   |                 |
| Lab Number                                                                   | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color           |
| K6/91                                                                        | SH437         | 5          | ≤ 0.03                            | Dark Olive Gray |
|                                                                              | SH438         | 1          | ≤ 0.03                            |                 |
|                                                                              | SH438         | 4          | ≤ 0.03                            |                 |
|                                                                              | SH438         | 7          | ≤ 0.02                            |                 |
|                                                                              | SH438         | 10         | ≤ 0.04                            |                 |
|                                                                              | SH438         | 13         | ≤ 0.03                            |                 |
|                                                                              | SH438         | 16         | ≤ 0.02                            |                 |
|                                                                              | SH438         | 19         | ≤ 0.03                            |                 |
|                                                                              | SH438         | 21         | ≤ 0.03                            |                 |
|                                                                              | SH438         | 24         | ≤ 0.02                            |                 |
| K6/92                                                                        | SH439         | 1          | ≤ 0.02                            | Gray            |
| K6/93                                                                        | SH439         | 3          | ≤ 0.03                            | Olive Gray      |
| K6/94                                                                        | SH439         | 5          | ≤ 0.02                            | Olive           |
|                                                                              | SH439         | 7          | ≤ 0.02                            |                 |
|                                                                              | SH439         | 9          | ≤ 0.03                            |                 |
|                                                                              | SH439         | 11         | ≤ 0.02                            |                 |
|                                                                              | SH440         | 1          | ≤ 0.02                            |                 |
|                                                                              | SH440         | 4          | ≤ 0.04                            |                 |
|                                                                              | SH440         | 7          | ≤ 0.02                            |                 |
|                                                                              | SH440         | 10         | ≤ 0.02                            |                 |
|                                                                              | SH440         | 13         | ≤ 0.02                            |                 |
|                                                                              | SH440         | 16         | ≤ 0.02                            |                 |
|                                                                              | SH440         | 19         | ≤ 0.02                            |                 |
|                                                                              | SH440         | 21         | ≤ 0.02                            |                 |
|                                                                              | SH440         | 24         | ≤ 0.03                            |                 |
| K6/95                                                                        | SH441         | 2          | ≤ 0.02                            | Dark Olive Gray |
|                                                                              | SH441         | 4          | ≤ 0.04                            |                 |
| K6/96                                                                        | SH441         | 6          | ≤ 0.04                            | Dark Gray       |
|                                                                              | SH441         | 8          | ≤ 0.03                            |                 |

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.

CESAS-EN-GG

4-Oct-02

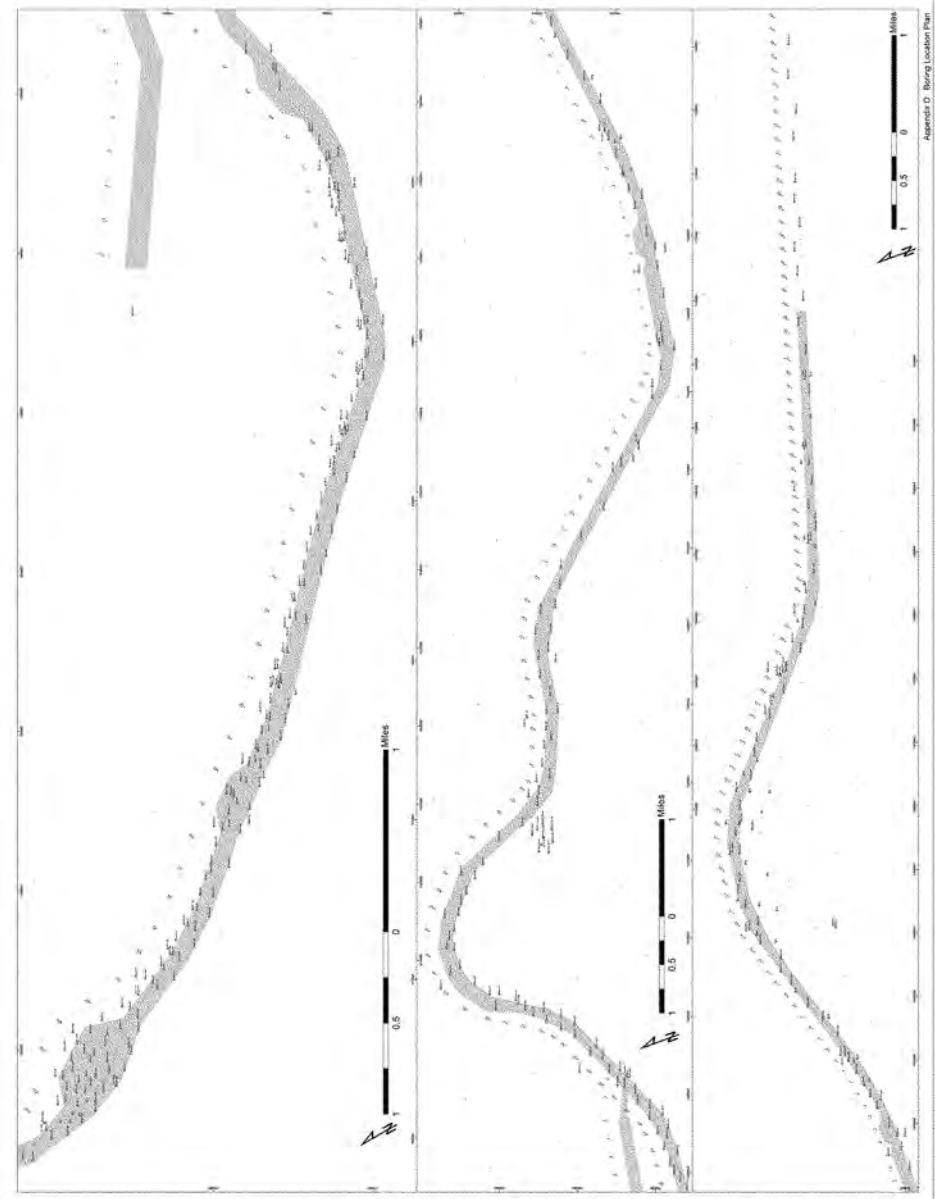
US Army Corps of Engineers  
Environmental & Materials Unit  
Marietta, GA

Table 2 - Radiation Screening

| Lab Number | Boring Number | Sample No. | Reading <sup>1</sup><br>(mRem/Hr) | Color                   |
|------------|---------------|------------|-----------------------------------|-------------------------|
|            | SH441         | 10         | ≤ 0.03                            |                         |
|            | SH441         | 12         | ≤ 0.03                            |                         |
| K6/97      | SH442         | 1          | ≤ 0.03                            | Olive                   |
|            | SH442         | 3          | ≤ 0.04                            |                         |
|            | SH442         | 5          | ≤ 0.04                            |                         |
| K6/98      | SH442         | 6          | ≤ 0.03                            | Dark Olive Gray & White |
|            | SH442         | 7          | ≤ 0.02                            |                         |
| K6/99      | SH443         | 1          | ≤ 0.03                            | Olive Gray              |
| K6/100     | SH443         | 3          | ≤ 0.02                            | Dark Gray               |
| K6/101     | SH443         | 5          | ≤ 0.04                            | Dark Olive Gray         |
|            | SH443         | 7          | ≤ 0.04                            |                         |

**Note<sup>1</sup>:** Readings are reported as the highest value in mRem/hour from a Bicon Geiger Mueller gauge Model Surveyor 50, S/N B912V, Calibrated on 13 May 2002 using a pancake probe S/N B855S.







# **Savannah Harbor Expansion Project**

Evaluation of Chloride Impacts with  
Proposed Mitigation Plan

*December 2007*

## Introduction

This report summarizes the results of chloride impacts on Abercorn Creek at the City of Savannah's water intake pipe with implementation of the proposed mitigation plan to alter flows in the estuary at each alternative navigation channel depth (44 ft, 45 ft, 46 ft, and 48 ft). The two proposed plans are: Plan 6b for the 44 ft depth, and Plan 6a for the 45 ft, 46 ft, and 48 ft depths. Details of each of the mitigation plans are shown in Figures 1 and 2. For details on how these plans were developed and selected, please see the main report document for this project.

**Figure 1:** Plan 6a (proposed mitigation for 45 ft, 46 ft and 48 ft channel depths)

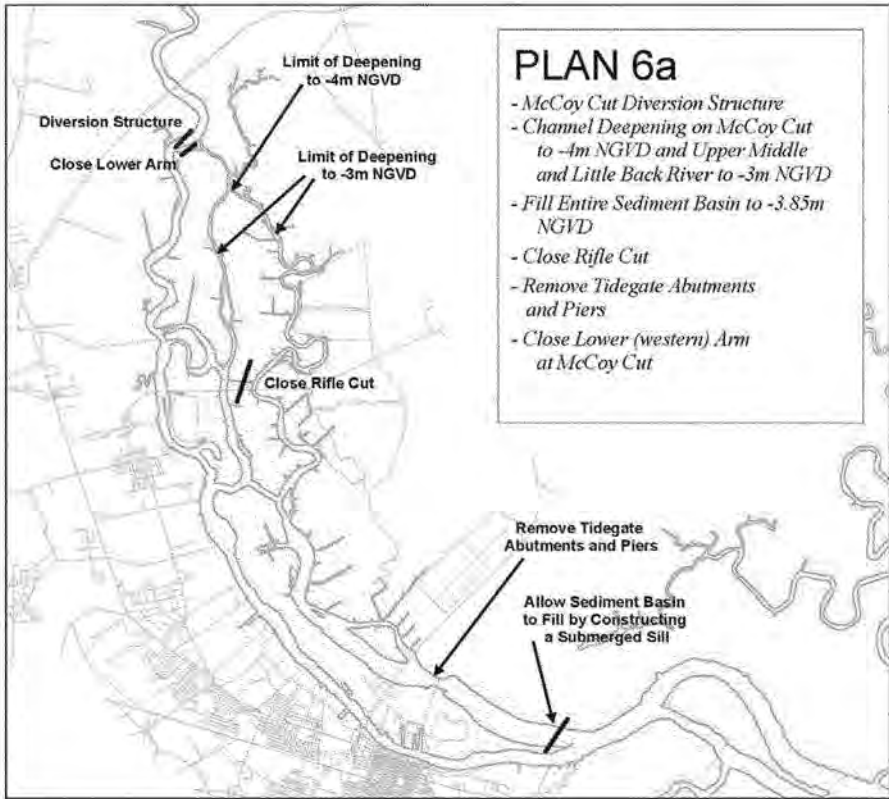
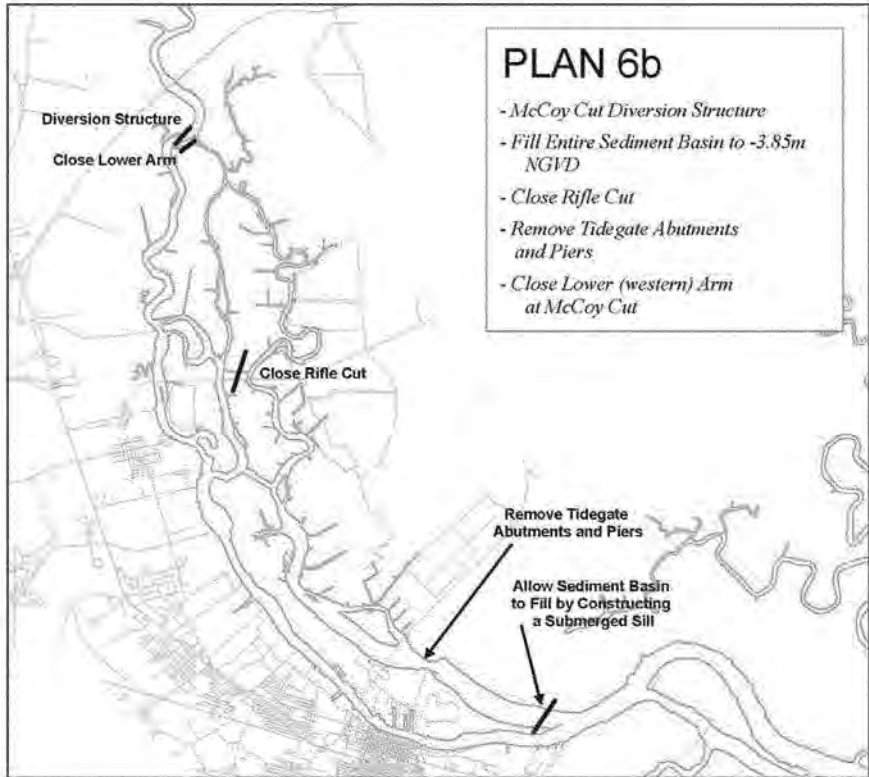


Figure 2: Plan 6b (proposed mitigation for 44 ft channel depth)



## Hydrodynamic Model Input

The plans were evaluated using the 3D hydrodynamic model EFDC, which predicts salinity values. The salinity values are then converted to chlorides. The calculations for linking salinity values and chloride values are described in *Savannah Harbor Expansion Project- Chloride Data Analysis and Model Development* report dated November 15, 2006 prepared by Tetra Tech.

The run period and flow parameters are shown below and were specified by the Savannah Harbor Expansion Water Quality Technical Evaluation Group and have been consistent throughout the study process. The group developed two model input scenarios for evaluation (See Table 1).

Table 1: Model Input Conditions

| <i>Run Scenario</i>      | <i>River Flow</i>               | <i>Evaluation Period</i>        |
|--------------------------|---------------------------------|---------------------------------|
| Basic Evaluation         | <i>Critical Flow Conditions</i> | <i>1-May to 1-November 1999</i> |
| Sensitivity Analysis #1  | <i>Average Flow Conditions</i>  | <i>1-May to 1-November 1997</i> |
| *Sensitivity Analysis #2 | <i>Low Flow Conditions</i>      | <i>1-May to 1-November 2001</i> |

*\*Sensitivity Analysis #2 was evaluated in addition to the two scenarios proposed by the technical evaluation group, because it has lower freshwater flows than that of 1999 and indicates a greater chloride impact on Abercorn Creek.*

## Output Presented

This report includes analysis of chloride values on Abercorn Creek near the City of Savannah's water intake pipe. All output was evaluated in the hydrodynamic model (EFDC) at cell 8\_130, which is representative of the water quality conditions at the City's intake pipe. The analysis includes tables showing (1) percent exceedance chloride values, (2) maximum and minimum chloride values and (3) number of days the chloride values are greater than 12 ppm. There are also three figures at the end of the report that show the percent exceedance chloride values presented in the tables in graphic form for each of the three run scenarios. All chloride values presented in the output are in units of ppm.

## Results

The results of the analysis show that there is little impact expected on chloride values near the City's intake pipe. The graphics make for a quick interpretation of the results and show the obvious slight impact to the chloride values. The largest increases in chlorides were found during the low flow period of 2001. At 1 percent exceedance the chloride value increase is less than 0.4 ppm with the 48 ft channel deepening. There are no changes in the number of days the chloride values are above 12 ppm when comparing existing conditions and proposed channel geometries. When viewing the three flow conditions, it becomes apparent that lower freshwater flow conditions contribute to higher salinity values in the harbor and thus chloride values at the City's intake increase as well. The number of days that the chloride value is above 12 ppm jumps from 95 to 180 when you compare average and drought flow conditions.

## Conclusion

In summary, Mitigation Plans 6a and 6b are the proposed flow altering mitigation plans to reduce impacts in the estuary. The model results show that chloride values do increase at the intake, despite mitigation efforts, but the increases are certainly not significant. The variability of chlorides at the City's intake is highly dependent on freshwater flow conditions, much more so than deepening the navigation channel.

# Basic Evaluation

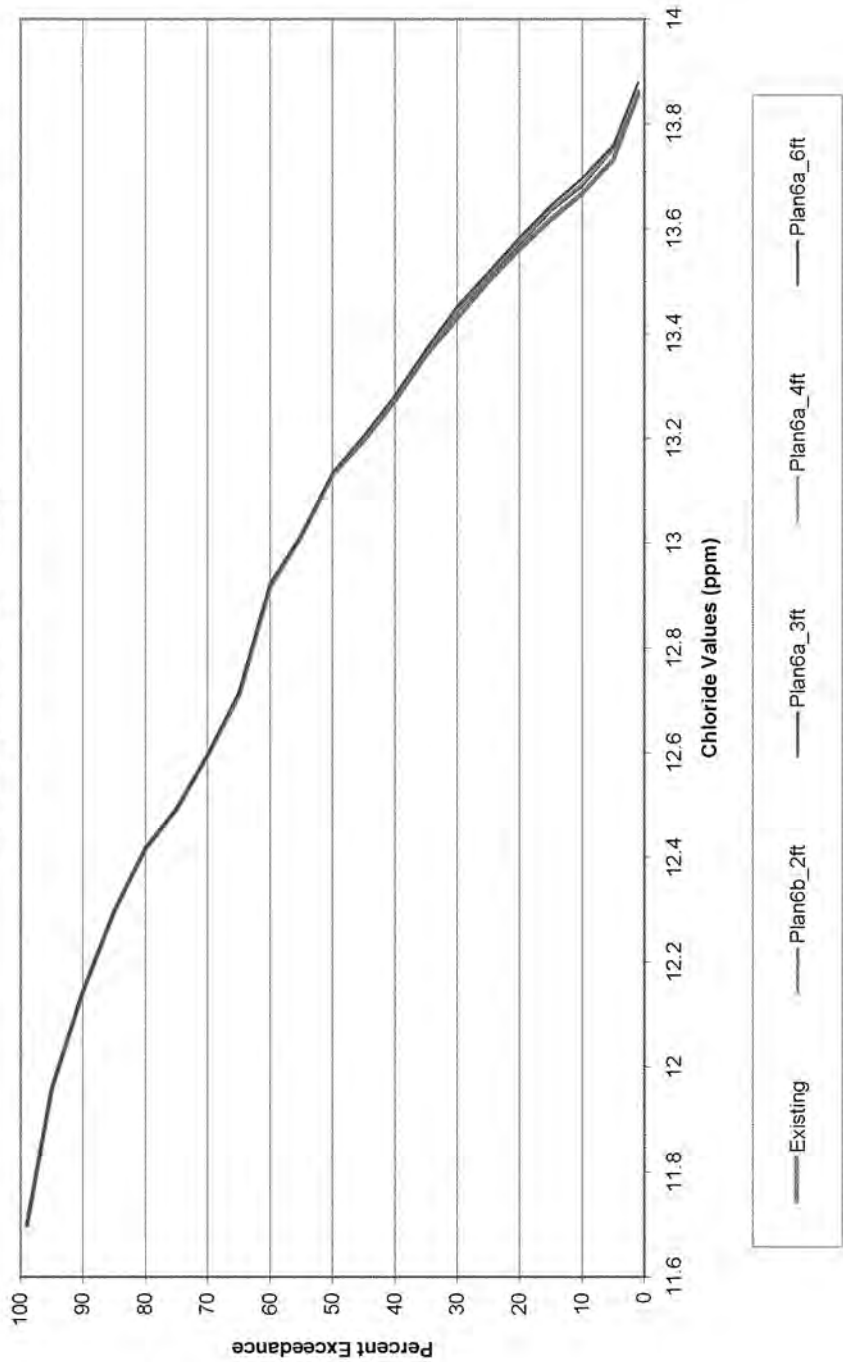
Simulation Period: May 1, 1999 to November 1, 1999

| Percent Exceedance | Existing Conditions<br>No Deepening<br>No Mitigation | 44 ft Channel Depth<br>Mitigation Plan 6b | 45 ft Channel Depth<br>Mitigation Plan 6a | 46 ft Channel Depth<br>Mitigation Plan 6a | 48 ft Channel Depth<br>Mitigation Plan 6a |
|--------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| 99                 | 11.70                                                | 11.70                                     | 11.70                                     | 11.70                                     | 11.70                                     |
| 95                 | 11.96                                                | 11.96                                     | 11.96                                     | 11.96                                     | 11.96                                     |
| 90                 | 12.14                                                | 12.14                                     | 12.14                                     | 12.14                                     | 12.14                                     |
| 85                 | 12.30                                                | 12.30                                     | 12.30                                     | 12.30                                     | 12.30                                     |
| 80                 | 12.42                                                | 12.42                                     | 12.42                                     | 12.42                                     | 12.42                                     |
| 75                 | 12.49                                                | 12.49                                     | 12.49                                     | 12.49                                     | 12.49                                     |
| 70                 | 12.60                                                | 12.60                                     | 12.60                                     | 12.60                                     | 12.60                                     |
| 65                 | 12.71                                                | 12.71                                     | 12.71                                     | 12.71                                     | 12.72                                     |
| 60                 | 12.92                                                | 12.92                                     | 12.92                                     | 12.92                                     | 12.92                                     |
| 55                 | 13.01                                                | 13.01                                     | 13.01                                     | 13.01                                     | 13.01                                     |
| 50                 | 13.13                                                | 13.13                                     | 13.13                                     | 13.13                                     | 13.13                                     |
| 45                 | 13.20                                                | 13.19                                     | 13.20                                     | 13.20                                     | 13.20                                     |
| 40                 | 13.27                                                | 13.27                                     | 13.28                                     | 13.28                                     | 13.28                                     |
| 35                 | 13.36                                                | 13.36                                     | 13.36                                     | 13.37                                     | 13.37                                     |
| 30                 | 13.43                                                | 13.43                                     | 13.44                                     | 13.44                                     | 13.45                                     |
| 25                 | 13.50                                                | 13.50                                     | 13.51                                     | 13.51                                     | 13.52                                     |
| 20                 | 13.56                                                | 13.56                                     | 13.57                                     | 13.57                                     | 13.58                                     |
| 15                 | 13.62                                                | 13.61                                     | 13.63                                     | 13.64                                     | 13.64                                     |
| 10                 | 13.67                                                | 13.66                                     | 13.68                                     | 13.69                                     | 13.70                                     |
| 5                  | 13.73                                                | 13.73                                     | 13.75                                     | 13.75                                     | 13.76                                     |
| 1                  | 13.86                                                | 13.86                                     | 13.86                                     | 13.86                                     | 13.88                                     |
| Maximum            | 13.88                                                | 13.88                                     | 13.89                                     | 13.89                                     | 13.90                                     |
| Minimum            | 11.63                                                | 11.63                                     | 11.63                                     | 11.63                                     | 11.63                                     |
| # days above 12ppm | 173                                                  | 173                                       | 173                                       | 173                                       | 173                                       |

All values presented are chloride parts per million (ppm).

# CHLORIDE MITIGATION PLANS EVALUATION RESULTS

## Basic Evaluation #1 - 1999



# Sensitivity Analysis #1

Simulation Period: May 1, 1997 to November 1, 1997

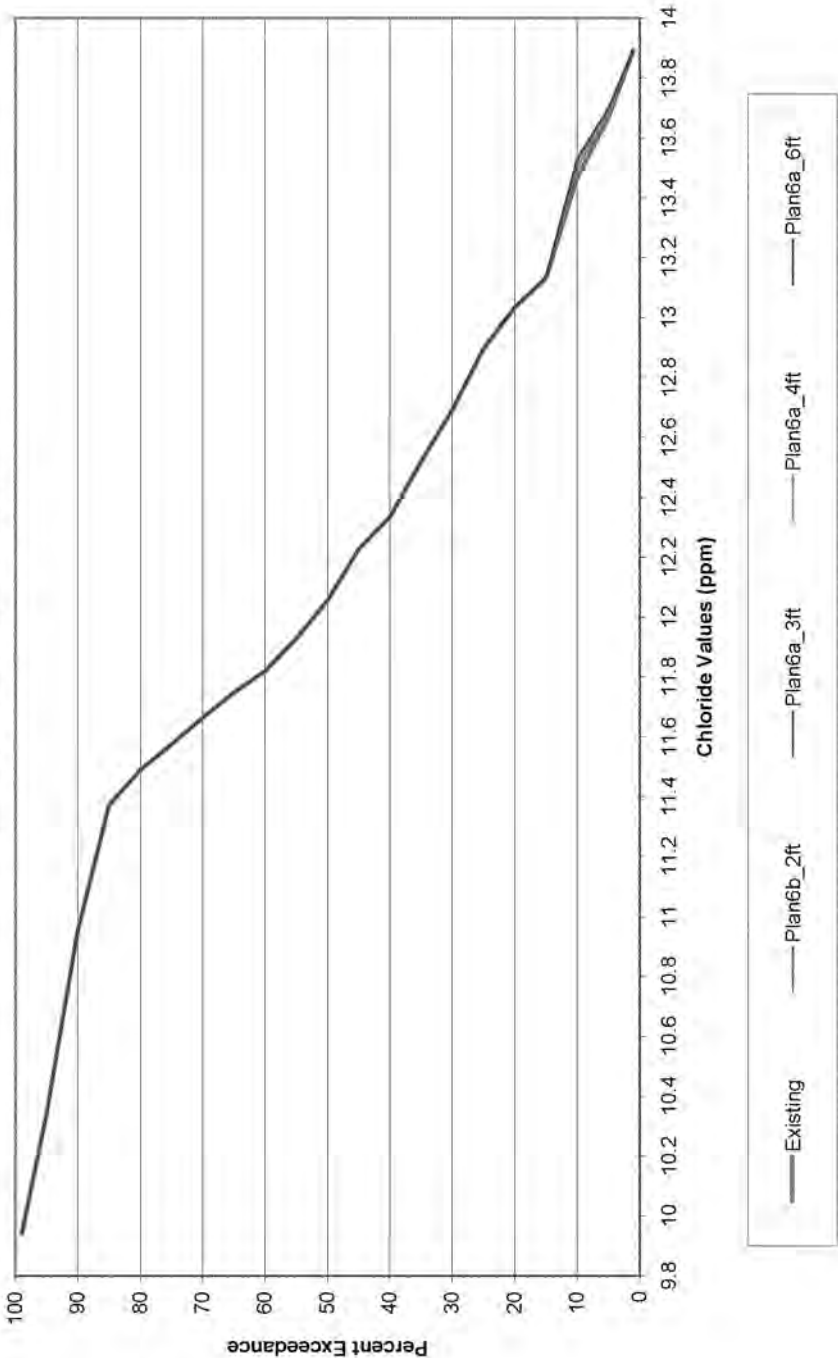
| Percent Exceedance | Existing Conditions<br>No Deepening<br>No Mitigation | 44 ft Channel Depth<br>Mitigation Plan 6b | 45 ft Channel Depth<br>Mitigation Plan 6a | 46 ft Channel Depth<br>Mitigation Plan 6a | 48 ft Channel Depth<br>Mitigation Plan 6a |
|--------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| 99                 | 9.94                                                 | 9.94                                      | 9.94                                      | 9.94                                      | 9.94                                      |
| 95                 | 10.34                                                | 10.34                                     | 10.34                                     | 10.34                                     | 10.34                                     |
| 90                 | 10.95                                                | 10.95                                     | 10.95                                     | 10.95                                     | 10.95                                     |
| 85                 | 11.37                                                | 11.37                                     | 11.37                                     | 11.37                                     | 11.37                                     |
| 80                 | 11.49                                                | 11.49                                     | 11.49                                     | 11.49                                     | 11.49                                     |
| 75                 | 11.57                                                | 11.57                                     | 11.57                                     | 11.57                                     | 11.57                                     |
| 70                 | 11.66                                                | 11.66                                     | 11.66                                     | 11.66                                     | 11.66                                     |
| 65                 | 11.75                                                | 11.75                                     | 11.75                                     | 11.75                                     | 11.75                                     |
| 60                 | 11.82                                                | 11.82                                     | 11.82                                     | 11.82                                     | 11.82                                     |
| 55                 | 11.93                                                | 11.93                                     | 11.93                                     | 11.93                                     | 11.93                                     |
| 50                 | 12.06                                                | 12.06                                     | 12.06                                     | 12.06                                     | 12.06                                     |
| 45                 | 12.23                                                | 12.23                                     | 12.23                                     | 12.23                                     | 12.23                                     |
| 40                 | 12.33                                                | 12.33                                     | 12.33                                     | 12.33                                     | 12.33                                     |
| 35                 | 12.52                                                | 12.52                                     | 12.52                                     | 12.52                                     | 12.52                                     |
| 30                 | 12.69                                                | 12.69                                     | 12.69                                     | 12.69                                     | 12.69                                     |
| 25                 | 12.90                                                | 12.89                                     | 12.90                                     | 12.90                                     | 12.90                                     |
| 20                 | 13.03                                                | 13.03                                     | 13.03                                     | 13.03                                     | 13.03                                     |
| 15                 | 13.13                                                | 13.13                                     | 13.13                                     | 13.13                                     | 13.14                                     |
| 10                 | 13.47                                                | 13.46                                     | 13.50                                     | 13.51                                     | 13.53                                     |
| 5                  | 13.67                                                | 13.66                                     | 13.68                                     | 13.69                                     | 13.70                                     |
| 1                  | 13.89                                                | 13.89                                     | 13.89                                     | 13.89                                     | 13.89                                     |
| Maximum            | 13.98                                                | 13.97                                     | 13.98                                     | 13.98                                     | 13.98                                     |
| Minimum            | 9.92                                                 | 9.92                                      | 9.92                                      | 9.92                                      | 9.92                                      |
| # days above 12ppm | 95                                                   | 95                                        | 95                                        | 95                                        | 95                                        |

*All values presented are chloride parts per million (ppm).*



# CHLORIDE MITIGATION PLANS EVALUATION RESULTS

## Sensitivity Analysis #1- 1997



## Sensitivity Analysis #2

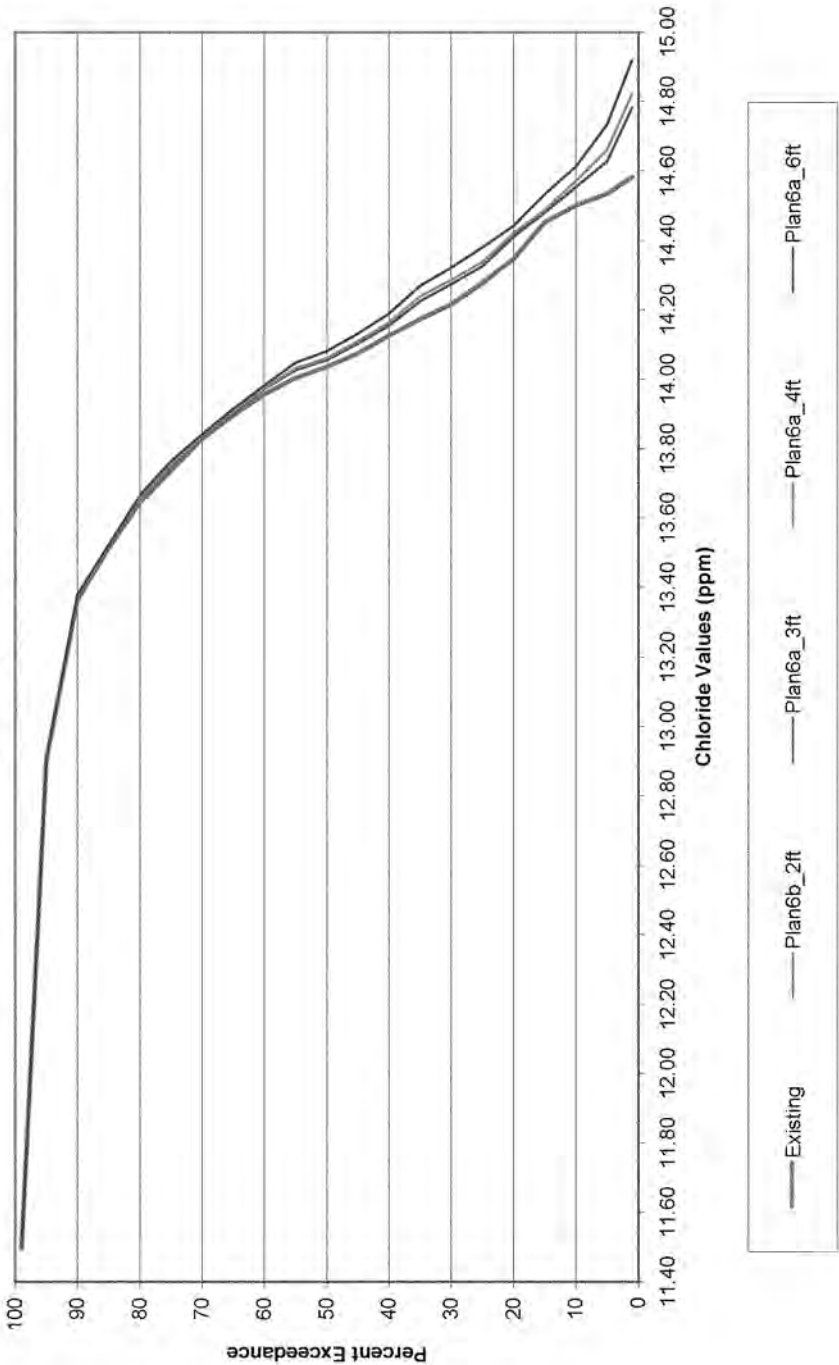
Simulation Period: May 1, 2001 to November 1, 2001

| Percent Exceedance | Existing Conditions<br>No Deepening<br>No Mitigation | 44 ft Channel Depth<br>Mitigation Plan 6b | 45 ft Channel Depth<br>Mitigation Plan 6a | 46 ft Channel Depth<br>Mitigation Plan 6a | 48 ft Channel Depth<br>Mitigation Plan 6a |
|--------------------|------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| 99                 | 11.48                                                | 11.50                                     | 11.50                                     | 11.50                                     | 11.50                                     |
| 95                 | 12.90                                                | 12.91                                     | 12.91                                     | 12.91                                     | 12.91                                     |
| 90                 | 13.36                                                | 13.36                                     | 13.37                                     | 13.37                                     | 13.38                                     |
| 85                 | 13.51                                                | 13.51                                     | 13.52                                     | 13.52                                     | 13.52                                     |
| 80                 | 13.65                                                | 13.64                                     | 13.66                                     | 13.66                                     | 13.67                                     |
| 75                 | 13.74                                                | 13.73                                     | 13.75                                     | 13.76                                     | 13.76                                     |
| 70                 | 13.83                                                | 13.83                                     | 13.84                                     | 13.84                                     | 13.84                                     |
| 65                 | 13.90                                                | 13.89                                     | 13.90                                     | 13.91                                     | 13.91                                     |
| 60                 | 13.96                                                | 13.96                                     | 13.97                                     | 13.97                                     | 13.98                                     |
| 55                 | 14.00                                                | 14.00                                     | 14.03                                     | 14.03                                     | 14.05                                     |
| 50                 | 14.04                                                | 14.03                                     | 14.06                                     | 14.06                                     | 14.08                                     |
| 45                 | 14.07                                                | 14.07                                     | 14.10                                     | 14.11                                     | 14.13                                     |
| 40                 | 14.13                                                | 14.13                                     | 14.15                                     | 14.16                                     | 14.19                                     |
| 35                 | 14.17                                                | 14.17                                     | 14.22                                     | 14.24                                     | 14.27                                     |
| 30                 | 14.22                                                | 14.21                                     | 14.27                                     | 14.29                                     | 14.32                                     |
| 25                 | 14.28                                                | 14.27                                     | 14.33                                     | 14.34                                     | 14.38                                     |
| 20                 | 14.35                                                | 14.35                                     | 14.41                                     | 14.42                                     | 14.44                                     |
| 15                 | 14.45                                                | 14.45                                     | 14.48                                     | 14.49                                     | 14.53                                     |
| 10                 | 14.50                                                | 14.50                                     | 14.55                                     | 14.57                                     | 14.61                                     |
| 5                  | 14.53                                                | 14.53                                     | 14.63                                     | 14.66                                     | 14.73                                     |
| 1                  | 14.58                                                | 14.58                                     | 14.78                                     | 14.82                                     | 14.92                                     |
| Maximum            | 14.66                                                | 14.65                                     | 14.92                                     | 14.98                                     | 15.10                                     |
| Minimum            | 11.28                                                | 11.28                                     | 11.28                                     | 11.28                                     | 11.28                                     |
| # days above 12ppm | 180                                                  | 180                                       | 180                                       | 180                                       | 180                                       |

*All values presented are chloride parts per million (ppm).*

# CHLORIDE MITIGATION PLANS EVALUATION RESULTS

Sensitivity Analysis #2- 2001





# **Savannah Harbor Expansion Project**

Evaluation of Fishery Habitat Impacts with  
Proposed Mitigation Plan

*January 2010*

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Appendices

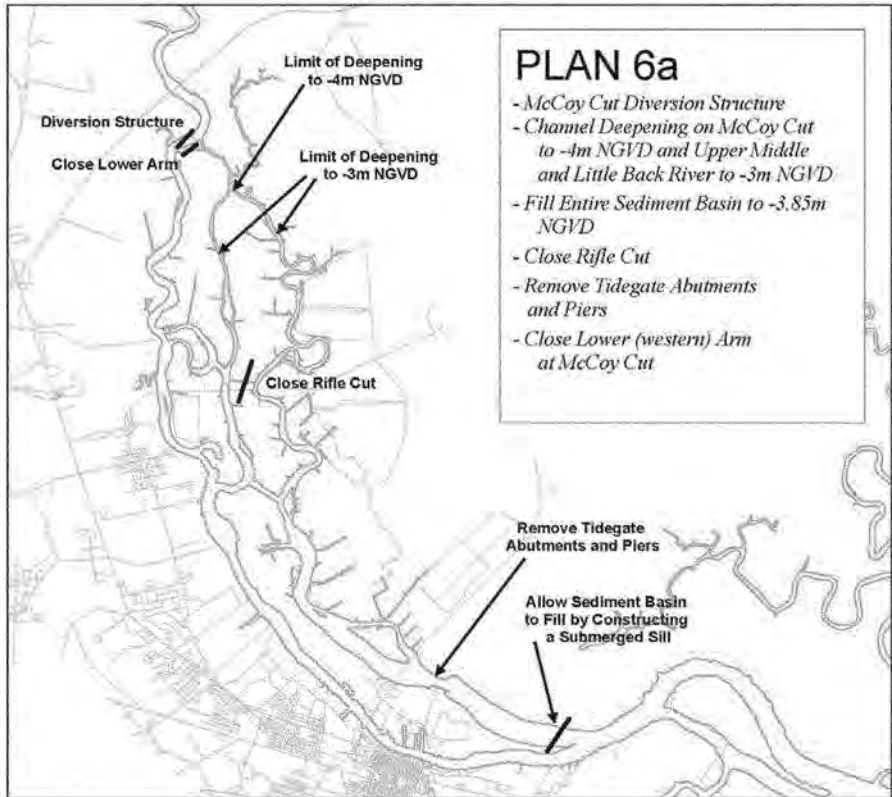
Appendix A- Habitat Suitability Figures

Appendix B- Habitat Suitability Tables (with Index Location Map)

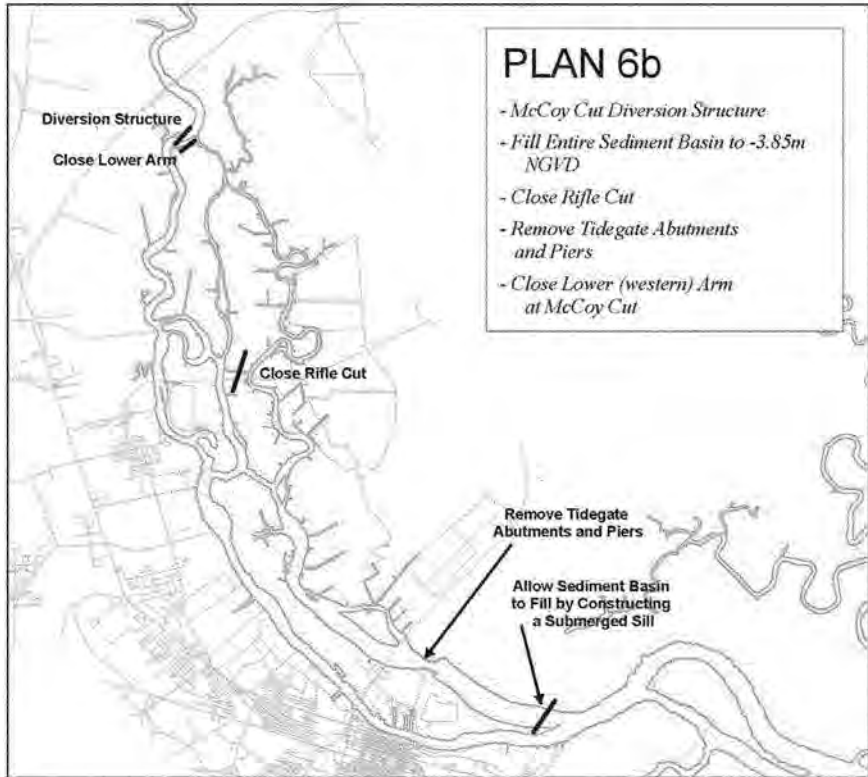
## Introduction

This report summarizes the results of fishery habitat impacts with implementation of the proposed mitigation plan to alter flows in the estuary at each alternative channel depth (44, 45, 46, 47 and 48 ft below MLLW). The two proposed plans are: Plan 6b for the 44 ft depth, and Plan 6a for the 45, 46, 47 and 48 ft depths. Details of each of the mitigation plans are shown in Figures 1 and 2. For details on how these plans were developed and selected, please see the main report document for this project.

**Figure 1:** Plan 6a (proposed mitigation for 45, 46, 47 and 48 ft channel depths)



**Figure 2:** Plan 6b (proposed mitigation for 44 ft channel depth)



In addition to the two proposed mitigation plans that alter flows in the estuary there is also a proposal to implement a Dissolved Oxygen Improvement System in the estuary that would raise DO levels during critical periods. The system would pull a sidestream of water from the river, superoxygenate the sidestream by combining the water with pure oxygen through the use of Speece Cones and then reintroduces the sidestream back into the river system where the superoxygenated water is allowed to mix with the water in the estuary system. This system allows treating the entire river for oxygen deficiencies through a small sidestream of water. For more details on the oxygen improvement system see the report titled *Design of Dissolved Oxygen Improvement Systems in Savannah Harbor* prepared by Tetra Tech and dated February 29, 2008.

## Model Input

The plans were evaluated using the 3D hydrodynamic model EFDC and water quality model WASP. The run period and flow parameters are shown below and were specified by the Savannah Harbor Expansion Fisheries Interagency Coordination Team and have been consistent throughout the study process. The group developed several model input scenarios for different species and life stages for evaluation (See Table 1).

Table 1: Model Input Conditions & Habitat Criteria

| SPECIES & LIFE STAGE          | FRESHWATER FLOW CONDITIONS | SIMULATION PERIOD | HABITAT CRITERIA                                                                                                                                                                                                          |
|-------------------------------|----------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Striped Bass (spawning)       | 20%-tile of Long Term      | April             | Suitable habitat when<br>(1) 90th percentile salinity $\leq$ 1 ppt, and<br>(2) Mean velocity $\geq$ 30 cm/s                                                                                                               |
|                               | 50%-tile of Long Term      | April             |                                                                                                                                                                                                                           |
|                               | 80%-tile of Long Term      | April             |                                                                                                                                                                                                                           |
| Striped Bass (eggs)           | 20%-tile of Long Term      | April             | Suitable habitat when<br>(1) Mean 50th percentile salinity $\leq$ 9 ppt,<br>(2) Mean velocity $\geq$ 30 cm/s, and<br>(3) 10th percentile D.O. $\geq$ 4.5 mg/l                                                             |
|                               | 50%-tile of Long Term      | April             |                                                                                                                                                                                                                           |
|                               | 80%-tile of Long Term      | April             |                                                                                                                                                                                                                           |
| Striped Bass (larvae)         | 20%-tile of Long Term      | May               | Suitable habitat when<br>(1) Mean 50th percentile salinity between 3 and 9 ppt, and<br>(2) Mean 10th percentile D.O. $\geq$ 4.5 mg/l                                                                                      |
|                               | 50%-tile of Long Term      | May               |                                                                                                                                                                                                                           |
|                               | 80%-tile of Long Term      | May               |                                                                                                                                                                                                                           |
| Southern Flounder             | 50%-tile of Long Term      | August*           | Suitable habitat when<br>DO $\geq$ 4.0 mg/l at 90% exceedance (10th %ile)                                                                                                                                                 |
| American Shad                 | 50%-tile of Long Term      | January           | Suitable habitat when<br>D.O. $\geq$ 4.0 mg/l at 90% exceedance (10th percentile)                                                                                                                                         |
|                               | 50%-tile of Long Term      | May               |                                                                                                                                                                                                                           |
|                               | 50%-tile of Long Term      | August*           |                                                                                                                                                                                                                           |
| Shortnose Sturgeon (adult)    | 50%-tile of Long Term      | January           | Suitable habitat when DO<br>$\geq$ 3.5 mg/l at 90% exceedance (10 <sup>th</sup> %ile),<br>$\geq$ 3.0 at 95% (5th percentile), and<br>$\geq$ 2.0 at 99% (1 percentile)<br>Suitable habitat when Max Salinity $\leq$ 25 ppt |
| Shortnose Sturgeon (adult)    | 50%-tile of Long Term      | August*           | Suitable habitat when DO<br>$\geq$ 4.0 mg/l at 90% exceedance (10th %ile),<br>$\geq$ 3.0 at 95% (5th percentile), and<br>$\geq$ 2.0 at 99% (1 percentile)<br>Suitable habitat when Max Salinity $\leq$ 10 ppt             |
| Shortnose Sturgeon (juvenile) | 50%-tile of Long Term      | January           | Suitable habitat when DO<br>$\geq$ 3.5 mg/l at 90% exceedance (10th %ile),<br>$\geq$ 3.0 at 95% (5th percentile), and<br>$\geq$ 2.0 at 99% (1 percentile)<br>Suitable habitat when Max Salinity $\leq$ 4 ppt              |

\*Findings from the August scenarios can be found in Design of Dissolved Oxygen Improvement Systems in Savannah Harbor prepared by Tetra Tech and dated February 29, 2008.



Long term percentile freshwater river flows needed for the simulations were determined using recorded gage data for Savannah River at Clyo, GA. The simulations run during the August time period did not use 50<sup>th</sup> percentile flows. These simulations were run by Tetra Tech and details of the findings can be found in the report titled *Design of Dissolved Oxygen Improvement Systems in Savannah Harbor* prepared by Tetra Tech and dated February 29, 2008. The DO Improvement System was designed for the critical period of August and evaluations were done for two different flow conditions: 1) 1997 representing an Average flow year and 2) 1999 representing a drought/low flow year. The long term 50<sup>th</sup> percentile freshwater flow value for August used as the upstream boundary condition in the initial habitat impact report (*Habitat Impacts of the Savannah Harbor Expansion Project* prepared by Tetra Tech and dated October 12, 2006) is 8130 cfs. The 50<sup>th</sup> percentile flow value for 1997 only is 9950 cfs and for 1999 only is 7380 cfs. The long term 50<sup>th</sup> percentile August flow value is actually between the average and drought year flows simulated in the oxygen improvement analysis and design.

## Output Presented

There are three types of output presented in this report. 1) Tables showing calculated areas of suitable habitat, 2) figures showing where these suitable habitat areas are located and how they may have changed with deepening the navigation channel and implementation of the mitigation plans, and 3) tables showing the habitat suitability for each cell, including columns for each criteria constituent. Tables and figures are compiled from runs done both by the USACE and by Tetra Tech. The evaluations performed by Tetra Tech were first presented in the Tetra Tech report titled *Design of Dissolved Oxygen Improvement Systems in Savannah Harbor* dated February 29, 2008.

## Results

Table 2 (next page) presents a summary of impacts to fisheries habitat for American Shad, Striped Bass, and Shortnose Sturgeon, and Southern Flounder. All values listed in the tables are square kilometers of the river system and are based on the criteria proposed by the Fisheries Interagency Coordination Team. The values listed for the % difference represent the percentage change between the proposed and existing project conditions. The proposed conditions in this case are with the navigation channel deepening and the mitigation plan in place. The % diff (Deepening Only) represents habitat gained or lost with deepening only and no mitigation plan in place.

The model results show that the impact to American Shad, based on the habitat suitability criteria, is very low. The majority of the small loss shown comes with the mitigation plan implemented. However, this number is a bit misleading. Modeling the mitigation features involved closing some of the grid cells to mimic placement of material for either a plug type of feature of a diversion structure. To model these features an entire cell was virtually deleted from the model grid and no DO, salinity, or velocity calculations were made for this area. Therefore the post processor considered these cells to fail the habitat criteria and were tagged as habitat lost. Although, there will likely be some habitat area lost due to construction of the mitigation features, it will likely be very small.

Striped Bass eggs, larvae and spawning do show less habitat loss with implementation of the mitigation features. The greatest gain is with the 46 ft depth, there is no net loss and the habitat gain is actually 191.4% for the 20<sup>th</sup> percentile flows. While that is a dramatic gain, it isn't typical of all the results.

Shortnose Sturgeon juveniles see reductions in impacts with implementation of the mitigation plan. However, the Shortnose Sturgeon adults see a greater impact on their habitat with implementation of the mitigation plan.

Table 2. Impacts to Habitat Suitability  
AMERICAN SHAD

|                         | Sustainable Habitat (km <sup>2</sup> ) |             |             |                 |                 |
|-------------------------|----------------------------------------|-------------|-------------|-----------------|-----------------|
|                         | May2016Flow                            | May2016Flow | May2016Flow | January2016Flow | August Avg Flow |
| Existing Conditions     | 19.55                                  | 19.55       | 19.55       | 19.55           | 19.55           |
| 42 ft depth             |                                        |             |             |                 |                 |
| Plan 6a                 | 19.50                                  | 19.50       | 19.50       | 19.52           | 19.49           |
| % difference            | -0.2%                                  | -0.2%       | -0.2%       | -0.2%           | -0.3%           |
| % diff (Deepening Only) | 0.0%                                   | 0.0%        | 0.0%        | 0.0%            | 0.0%            |
| 45 ft depth             |                                        |             |             |                 |                 |
| Plan 6a                 | 19.51                                  | 19.51       | 19.51       | 19.52           | 19.49           |
| % difference            | -0.2%                                  | -0.2%       | -0.2%       | -0.2%           | -0.3%           |
| % diff (Deepening Only) | 0.0%                                   | 0.0%        | 0.0%        | 0.0%            | 0.0%            |
| 46 ft depth             |                                        |             |             |                 |                 |
| Plan 6a                 | 19.51                                  | 19.51       | 19.51       | 19.52           | 19.51           |
| % difference            | -0.2%                                  | -0.2%       | -0.2%       | -0.2%           | -0.2%           |
| % diff (Deepening Only) | 0.0%                                   | 0.0%        | 0.0%        | 0.0%            | 0.0%            |
| 47 ft depth             |                                        |             |             |                 |                 |
| Plan 6a                 | 19.51                                  | 19.51       | 19.51       | 19.52           | 19.51           |
| % difference            | -0.2%                                  | -0.2%       | -0.2%       | -0.2%           | -0.2%           |
| % diff (Deepening Only) | 0.0%                                   | 0.0%        | 0.0%        | 0.0%            | 0.0%            |
| 48 ft depth             |                                        |             |             |                 |                 |
| Plan 6a                 | 19.51                                  | 19.51       | 19.51       | 19.52           | 19.51           |
| % difference            | -0.2%                                  | -0.2%       | -0.2%       | -0.2%           | -0.2%           |
| % diff (Deepening Only) | 0.0%                                   | 0.0%        | 0.0%        | 0.0%            | 0.0%            |

STRIPED BASS

|                         | EGGS                                   |               |               | LARVAE                                 |             |             | SPAWNING                               |               |               |
|-------------------------|----------------------------------------|---------------|---------------|----------------------------------------|-------------|-------------|----------------------------------------|---------------|---------------|
|                         | Sustainable Habitat (km <sup>2</sup> ) |               |               | Sustainable Habitat (km <sup>2</sup> ) |             |             | Sustainable Habitat (km <sup>2</sup> ) |               |               |
|                         | April2016Flow                          | April2016Flow | April2016Flow | May2016Flow                            | May2016Flow | May2016Flow | April2016Flow                          | April2016Flow | April2016Flow |
| Existing Conditions     | 3.89                                   | 6.78          | 9.13          | 0.81                                   | 2.28        | 4.02        | 2.89                                   | 4.21          | 7.48          |
| 42 ft depth             |                                        |               |               |                                        |             |             |                                        |               |               |
| Plan 6b                 | 3.02                                   | 6.18          | 9.82          | 2.22                                   | 2.16        | 3.47        | 2.19                                   | 4.90          | 7.23          |
| % difference            | -22.3%                                 | -9.4%         | 7.8%          | 172.6%                                 | -2.8%       | -13.7%      | -13.2%                                 | -7.9%         | -2.9%         |
| % diff (Deepening Only) | -10.4%                                 | -8.7%         | -2.2%         | 33.0%                                  | -13.5%      | -1.7%       | -7.6%                                  | -8.0%         | -6.2%         |
| 45 ft depth             |                                        |               |               |                                        |             |             |                                        |               |               |
| Plan 6a                 | 3.21                                   | 7.12          | 9.66          | 2.32                                   | 2.32        | 4.32        | 2.23                                   | 3.82          | 6.82          |
| % difference            | -17.6%                                 | 5.2%          | 8.0%          | 187.4%                                 | 7.7%        | 7.6%        | -13.5%                                 | 9.2%          | -8.5%         |
| % diff (Deepening Only) | -12.3%                                 | -17.2%        | -4.9%         | 56.4%                                  | -18.6%      | -7.7%       | -16.6%                                 | -12.2%        | -6.6%         |
| 46 ft depth             |                                        |               |               |                                        |             |             |                                        |               |               |
| Plan 6a                 | 3.89                                   | 6.78          | 9.76          | 2.36                                   | 2.41        | 4.43        | 2.10                                   | 3.79          | 6.84          |
| % difference            | -7.6%                                  | 0.0%          | 6.9%          | 191.4%                                 | 5.6%        | 10.1%       | -18.7%                                 | -10.0%        | -10.8%        |
| % diff (Deepening Only) | -14.0%                                 | -15.9%        | -4.8%         | 99.5%                                  | -21.2%      | -4.5%       | -17.7%                                 | -13.0%        | -11.8%        |
| 47 ft depth             |                                        |               |               |                                        |             |             |                                        |               |               |
| Plan 6a                 | 3.42                                   | 6.93          | 9.59          | 2.25                                   | 2.17        | 5.08        | 2.04                                   | 3.54          | 6.50          |
| % difference            | -10.1%                                 | -17.1%        | 5.0%          | 178.7%                                 | -3.0%       | 26.4%       | -21.3%                                 | -13.5%        | -12.7%        |
| % diff (Deepening Only) | -17.0%                                 | -20.9%        | 6.4%          | 105.8%                                 | -13.8%      | 6.6%        | -14.3%                                 | -16.7%        | -14.7%        |
| 48 ft depth             |                                        |               |               |                                        |             |             |                                        |               |               |
| Plan 6a                 | 3.71                                   | 6.98          | 9.44          | 2.96                                   | 2.20        | 5.22        | 1.97                                   | 3.50          | 6.47          |
| % difference            | -4.6%                                  | -10.8%        | -3.4%         | 154.6%                                 | -2.3%       | 30.0%       | -23.9%                                 | -16.1%        | -13.7%        |
| % diff (Deepening Only) | -19.4%                                 | -24.5%        | -7.2%         | 104.6%                                 | -13.8%      | 8.0%        | -18.9%                                 | -19.7%        | -11.3%        |

SHORTNOSE STURGEON

|                         | JUVENILES                              |                 | ADULTS                                 |                 |
|-------------------------|----------------------------------------|-----------------|----------------------------------------|-----------------|
|                         | Sustainable Habitat (km <sup>2</sup> ) |                 | Sustainable Habitat (km <sup>2</sup> ) |                 |
|                         | January2016Flow                        | January2016Flow | January2016Flow                        | August Avg Flow |
| Existing Conditions     | 6.50                                   | 16.10           | 5.63                                   |                 |
| 44 ft depth             |                                        |                 |                                        |                 |
| Plan 6b                 | 7.26                                   | 15.48           | 6.34                                   |                 |
| % difference            | 11.7%                                  | -3.8%           | 12.6%                                  |                 |
| % diff (Deepening Only) | 5.0%                                   | 0.9%            | 3.20                                   |                 |
| 45 ft depth             |                                        |                 |                                        |                 |
| Plan 6a                 | 7.16                                   | 14.87           | 5.58                                   |                 |
| % difference            | 2.4%                                   | -7.6%           | -1.4%                                  |                 |
| % diff (Deepening Only) | -10.4%                                 | -8.5%           | -6.40                                  |                 |
| 46 ft depth             |                                        |                 |                                        |                 |
| Plan 6a                 | 6.98                                   | 14.72           | 5.51                                   |                 |
| % difference            | 6.1%                                   | -8.6%           | -2.2%                                  |                 |
| % diff (Deepening Only) | -15.9%                                 | -9.1%           | -9.50                                  |                 |
| 47 ft depth             |                                        |                 |                                        |                 |
| Plan 6a                 | 6.84                                   | 14.62           | 6.24                                   |                 |
| % difference            | -4.9%                                  | -9.2%           | -6.9%                                  |                 |
| % diff (Deepening Only) | -19.0%                                 | -9.9%           | -13.1%                                 |                 |
| 48 ft depth             |                                        |                 |                                        |                 |
| Plan 6a                 | 6.86                                   | 14.33           | 5.17                                   |                 |
| % difference            | -1.8%                                  | -11.0%          | -8.2%                                  |                 |
| % diff (Deepening Only) | -21.6%                                 | -1.1%           | -15.80                                 |                 |

SOUTHERN FLOUNDER

|                         | Sustainable Habitat (km <sup>2</sup> ) |
|-------------------------|----------------------------------------|
|                         | August Avg Flow                        |
| Existing Conditions     | 7.57                                   |
| 44 ft depth             |                                        |
| Plan 6b                 | 13.19                                  |
| % difference            | 74.1%                                  |
| % diff (Deepening Only) | -0.3%                                  |
| 45 ft depth             |                                        |
| Plan 6a                 | 11.67                                  |
| % difference            | 54.2%                                  |
| % diff (Deepening Only) | -2.4%                                  |
| 46 ft depth             |                                        |
| Plan 6a                 | 11.91                                  |
| % difference            | 57.3%                                  |
| % diff (Deepening Only) | -3.4%                                  |
| 47 ft depth             |                                        |
| Plan 6a                 | 11.91                                  |
| % difference            | 57.3%                                  |
| % diff (Deepening Only) | -7.8%                                  |
| 48 ft depth             |                                        |
| Plan 6a                 | 11.67                                  |
| % difference            | 52.9%                                  |
| % diff (Deepening Only) | 0.0%                                   |

## Conclusion

In summary, Mitigation Plans 6a and 6b are the proposed flow altering components of the mitigation plans. Both of the proposed plans include operation of the DO Improvement System during critical periods (July through September). The plans do have an effect on fisheries habitat. The positive impacts occur with Striped Bass, especially larvae, Southern Flounder, and Shortnose Sturgeon juveniles. There is little to no impact shown with American Shad. Shortnose Sturgeon adults experience the greatest negative impact during the January flow period, however, the August flow period shows improvement over the deepened only condition when the DO Improvement System is activated.

## References

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Tetra Tech Inc., *Habitat Impacts of the Savannah Harbor Expansion Project*, October 12, 2006.

Tetra Tech Inc., *Design of Dissolved Oxygen Improvement Systems in Savannah Harbor*, February 29, 2008.

Tetra Tech Inc., *Development of the Hydrodynamic and Water Quality Models for the Savannah Harbor Expansion Project*, January 30, 2006.

# **Appendix A**

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## **Habitat Suitability Figures**

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**Existing Conditions**  
*No Deepening No Mitigation*

*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

Existing Conditions (42 ft depth)  
May 20th percentile flow

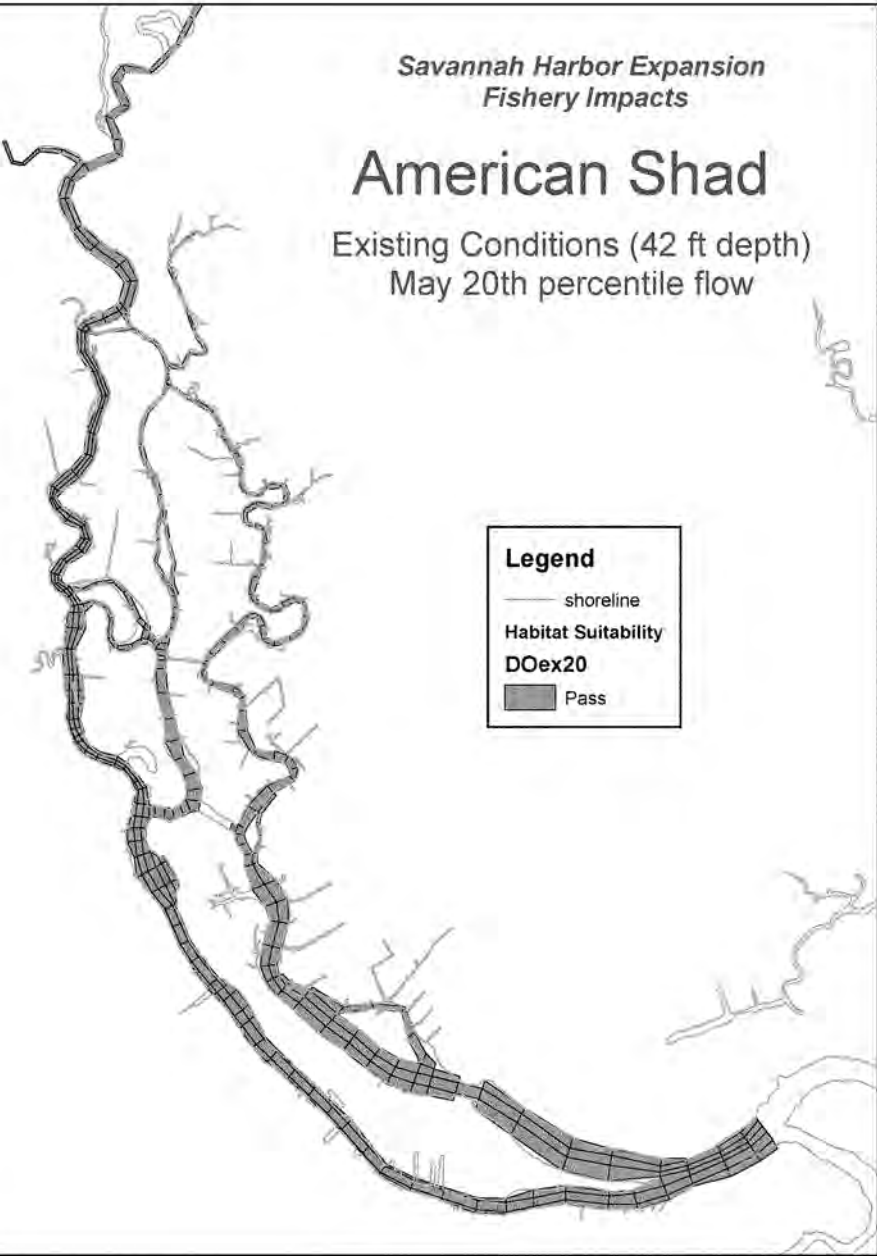
**Legend**

— shoreline

**Habitat Suitability**

**DOex20**

 Pass





*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

Existing Conditions (42 ft depth)  
May 50th percentile flow

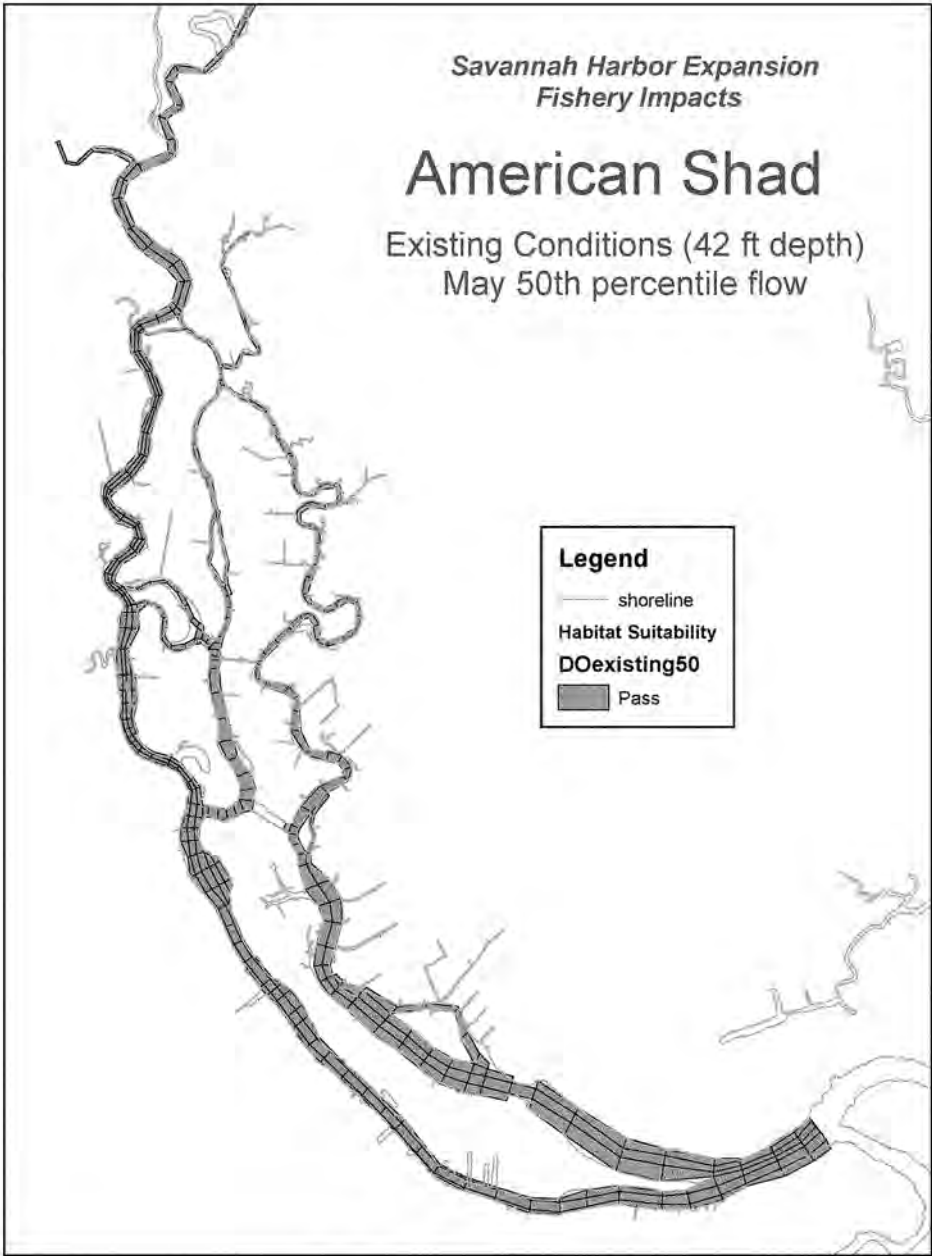
**Legend**

— shoreline

Habitat Suitability

DOexisting50

Pass



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

Existing Conditions (42 ft depth)  
May 80th percentile flow

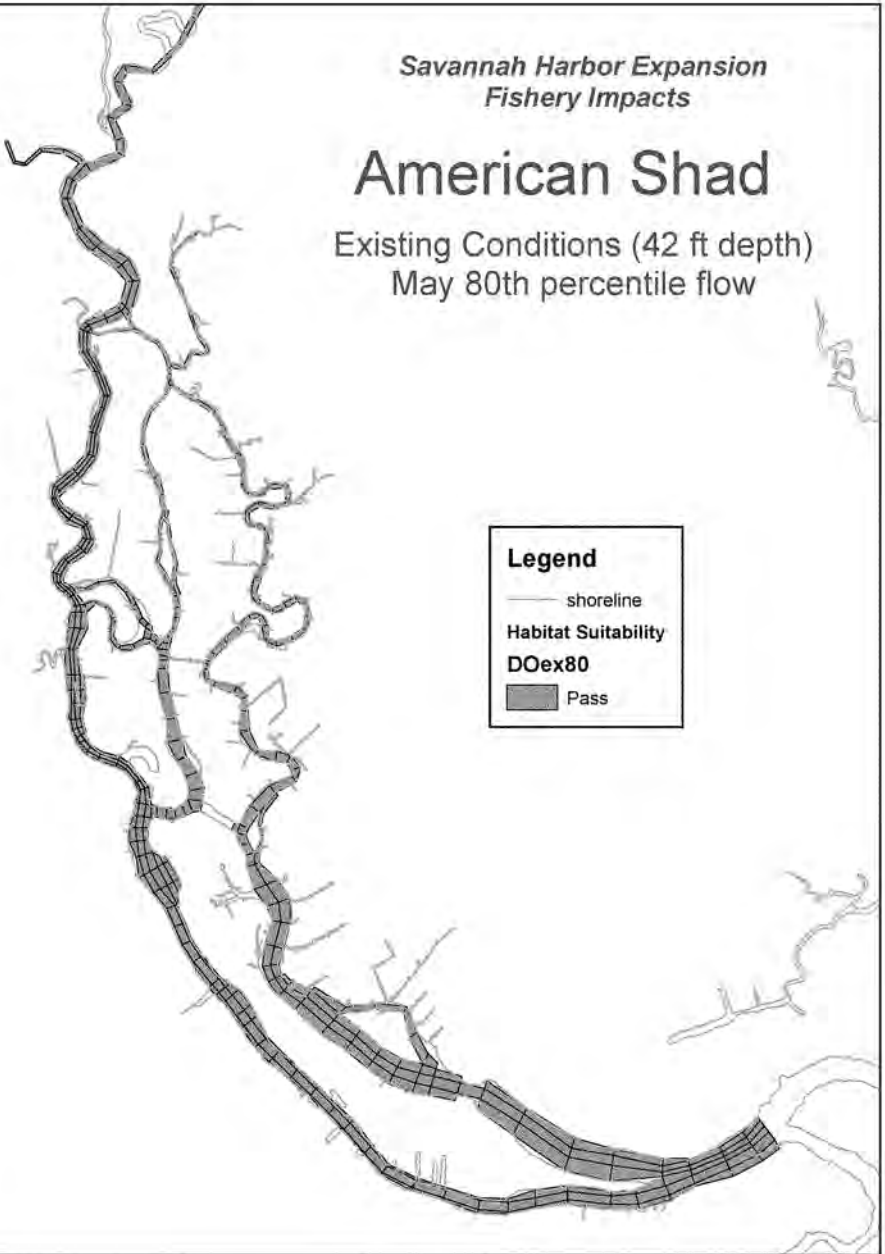
### Legend

— shoreline

Habitat Suitability

DOex80

Pass



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

Existing Conditions (42 ft depth)  
January 50th percentile flow

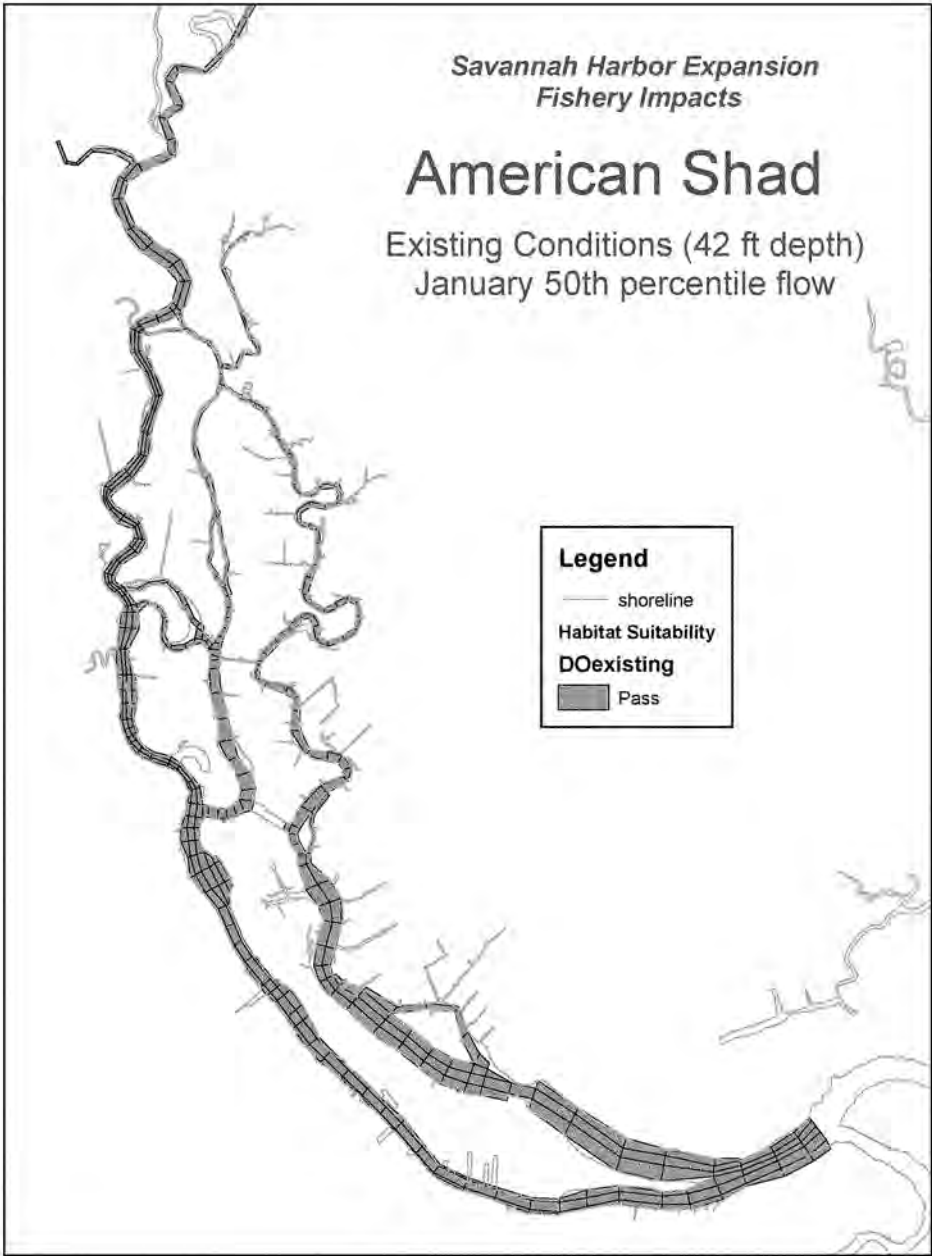
**Legend**

— shoreline

**Habitat Suitability**

**DOexisting**

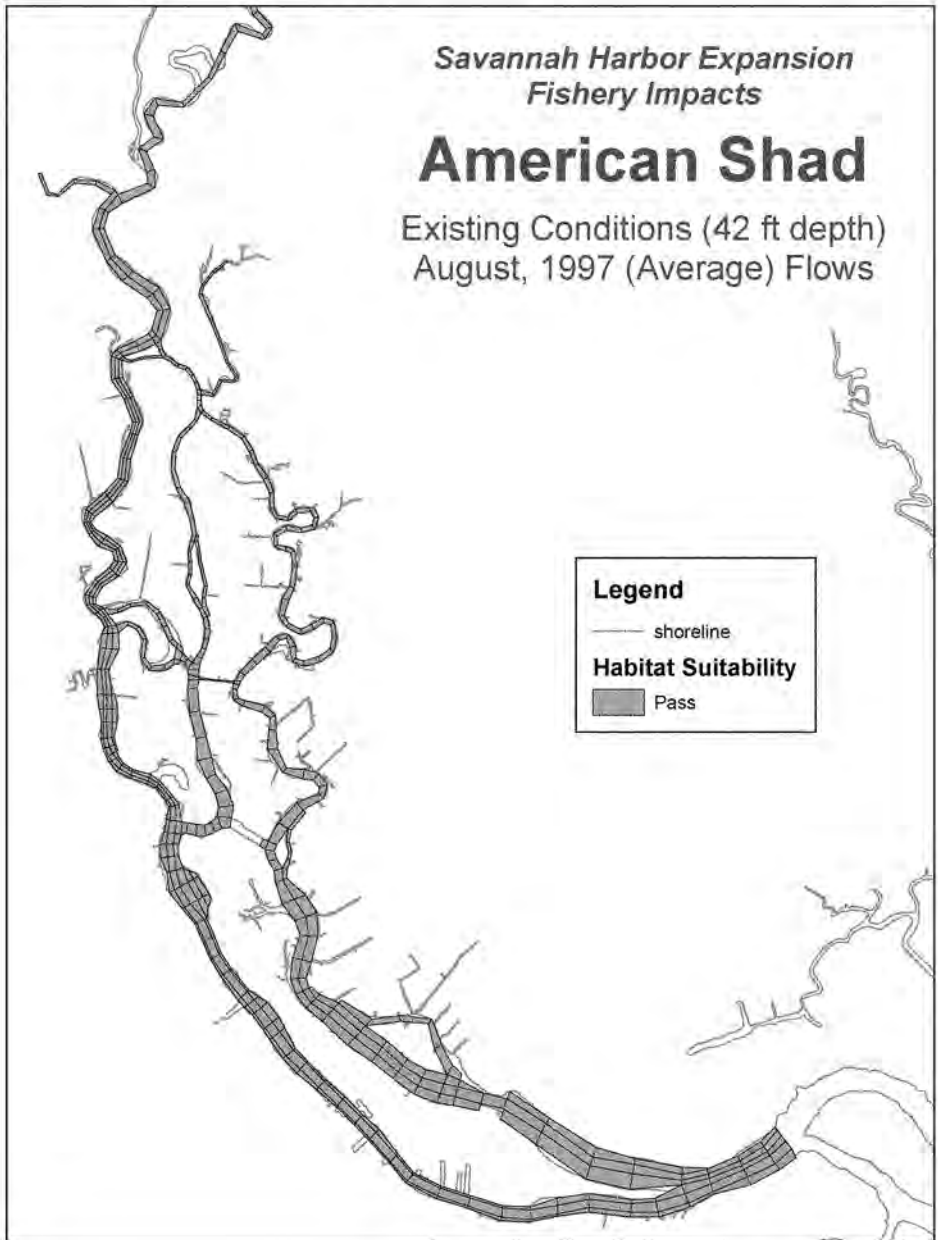
 Pass



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

Existing Conditions (42 ft depth)  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

Existing Conditions (42 ft depth)  
April, 20th percentile flows

## Legend

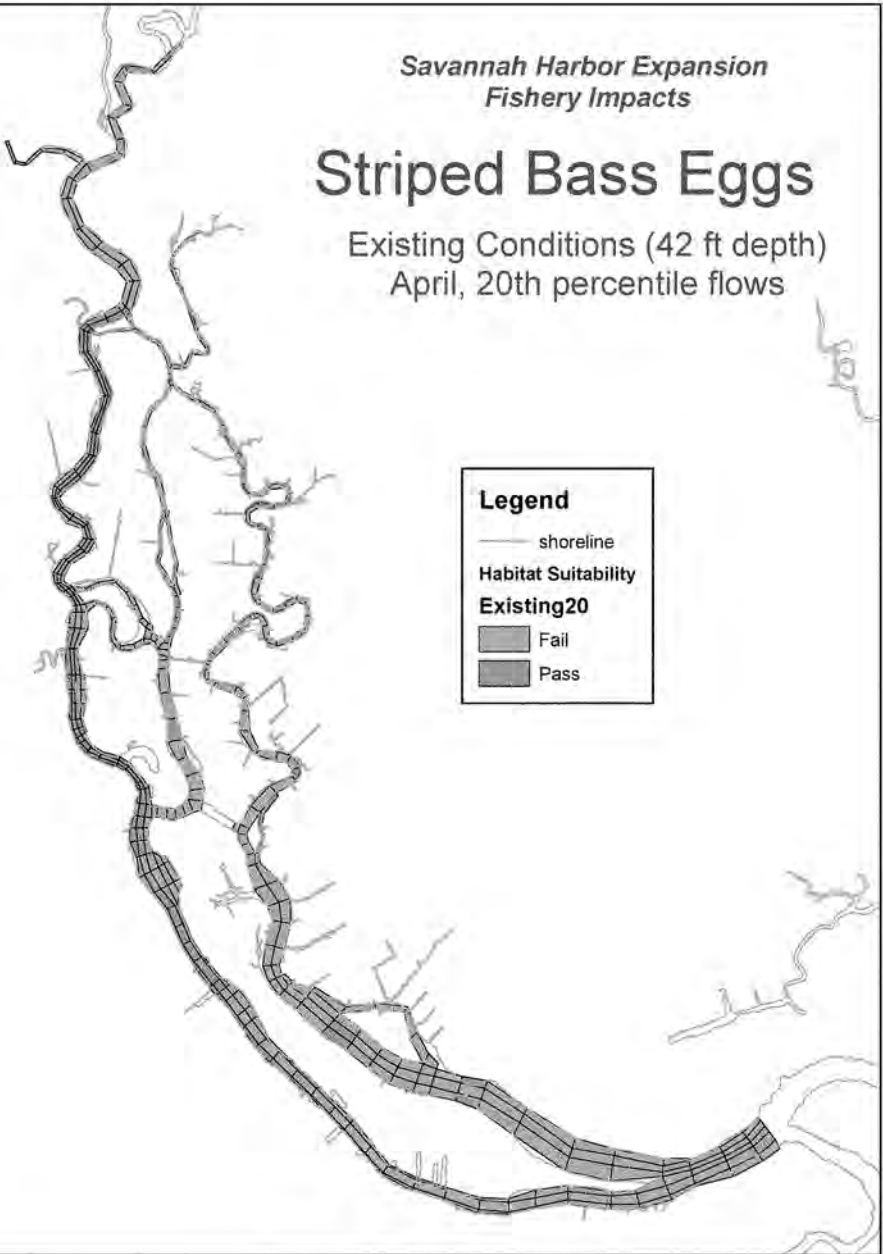
— shoreline

Habitat Suitability

**Existing20**

Fail

Pass



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Eggs

Existing Conditions (42 ft depth)  
April, 50th percentile flows

### Legend

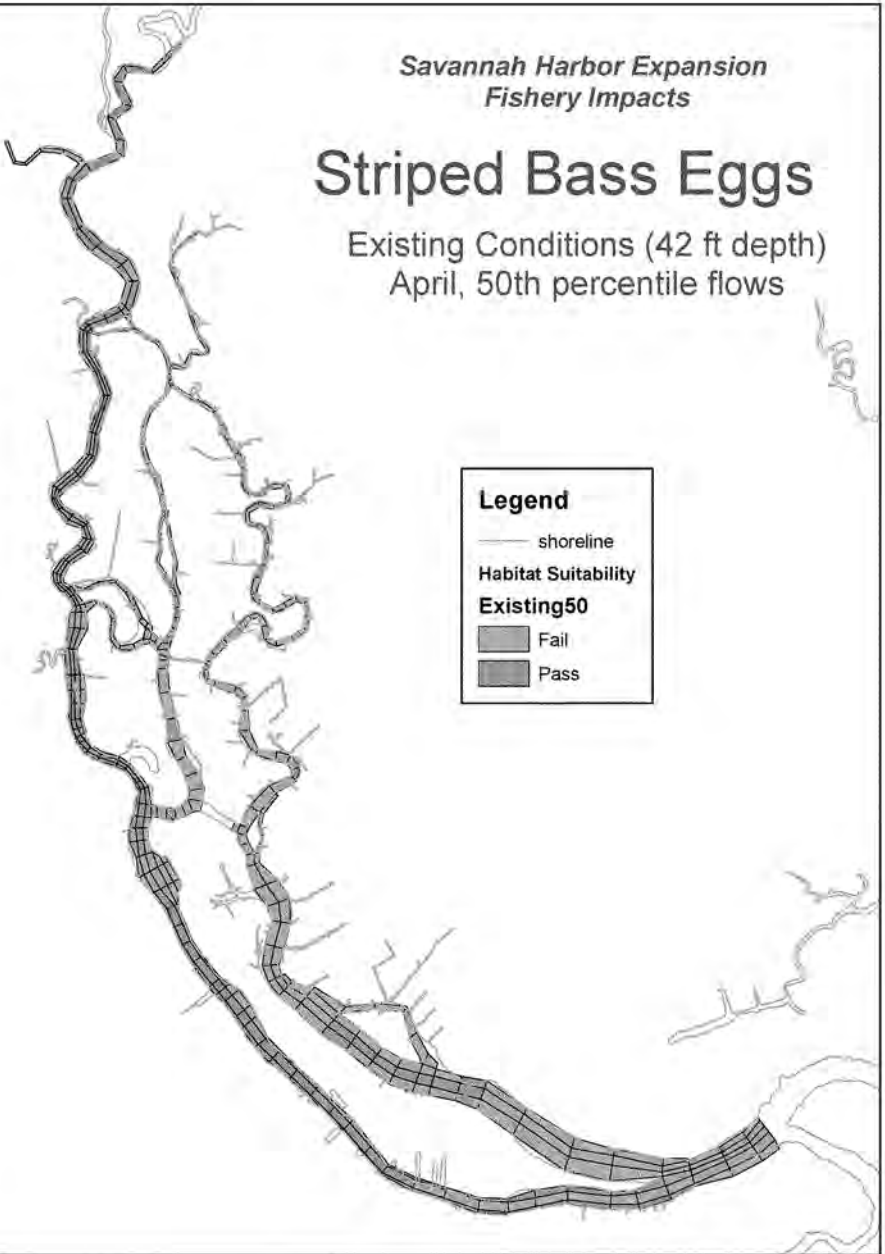
— shoreline

Habitat Suitability

Existing50

Fail

Pass



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

Existing Conditions (42 ft depth)  
April, 80th percentile flows

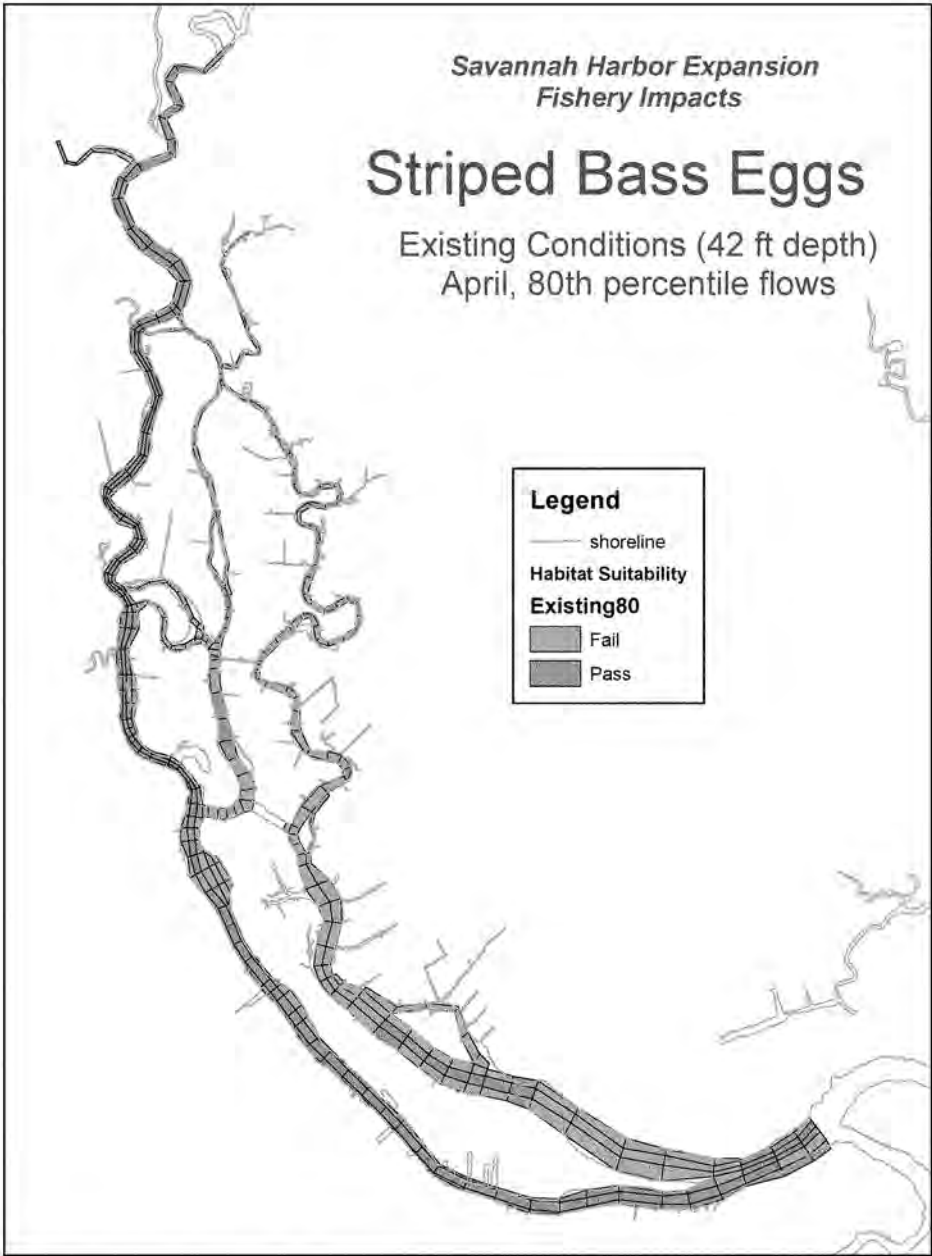
**Legend**

— shoreline

**Habitat Suitability**

**Existing80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | Fail |
|  | Pass |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

Existing Conditions (42 ft depth)  
May, 20th percentile flows

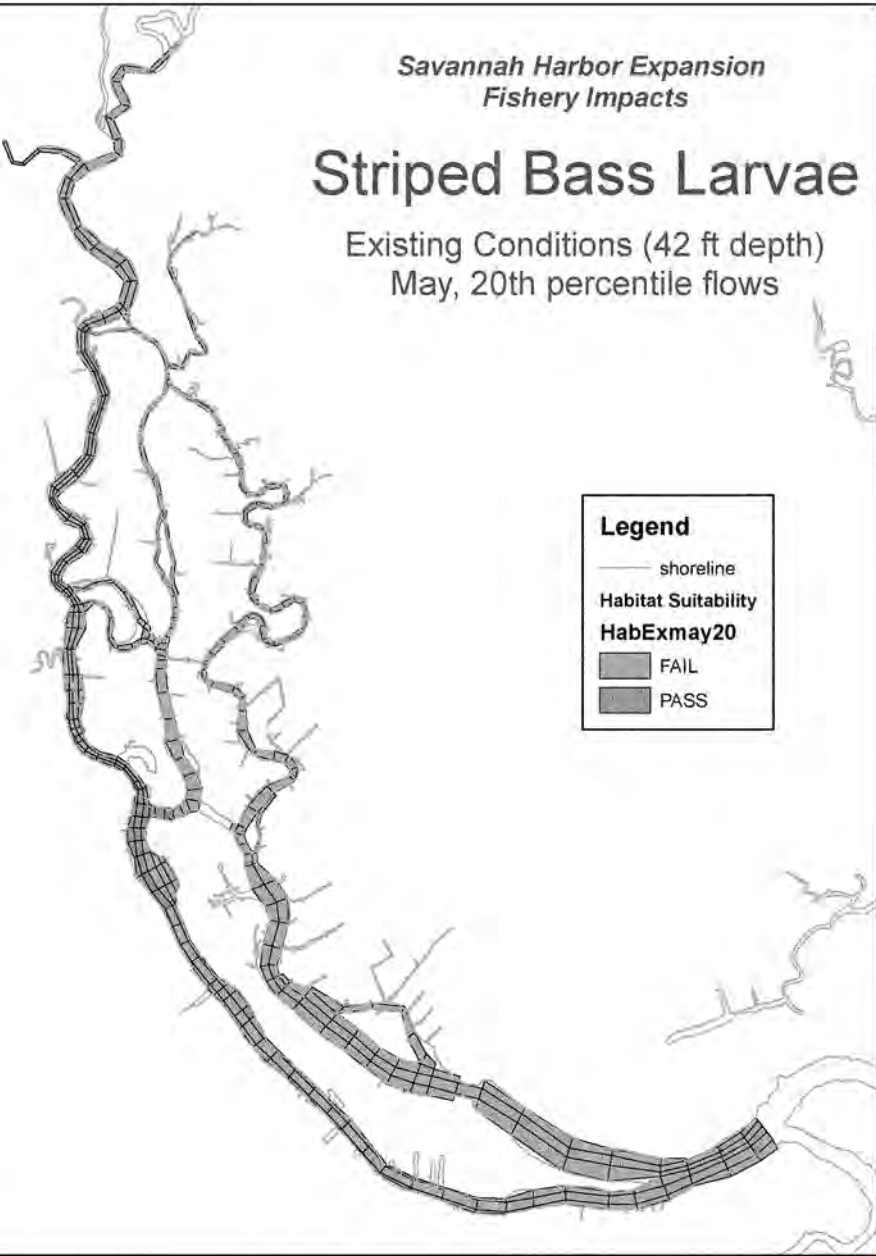
**Legend**

— shoreline

**Habitat Suitability**

**HabExmay20**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | FAIL |
|  | PASS |





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

Existing Conditions (42 ft depth)  
May, 50th percentile flows

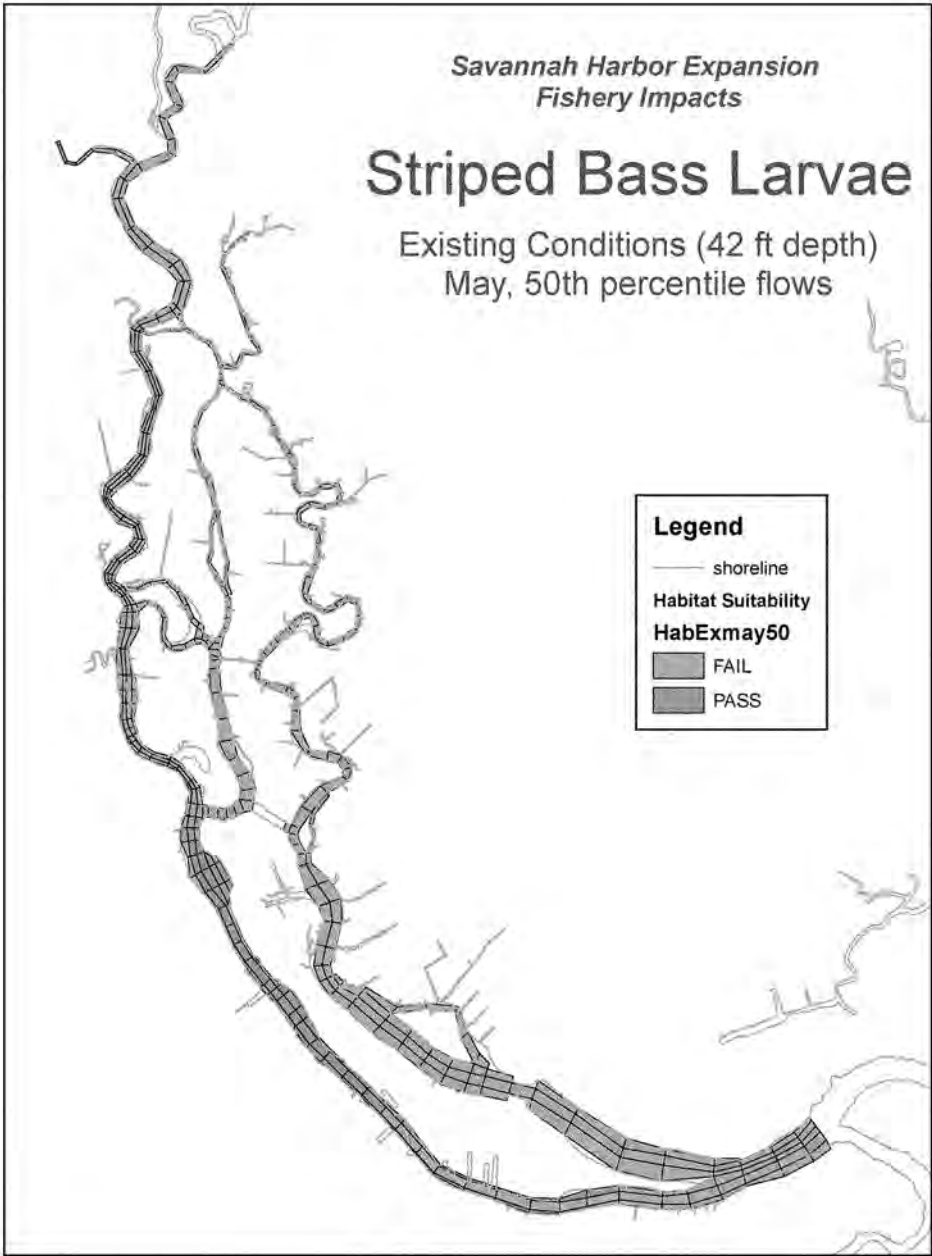
**Legend**

— shoreline

**Habitat Suitability**

**HabExmay50**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | FAIL |
|  | PASS |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

Existing Conditions (42 ft depth)  
May, 80th percentile flows

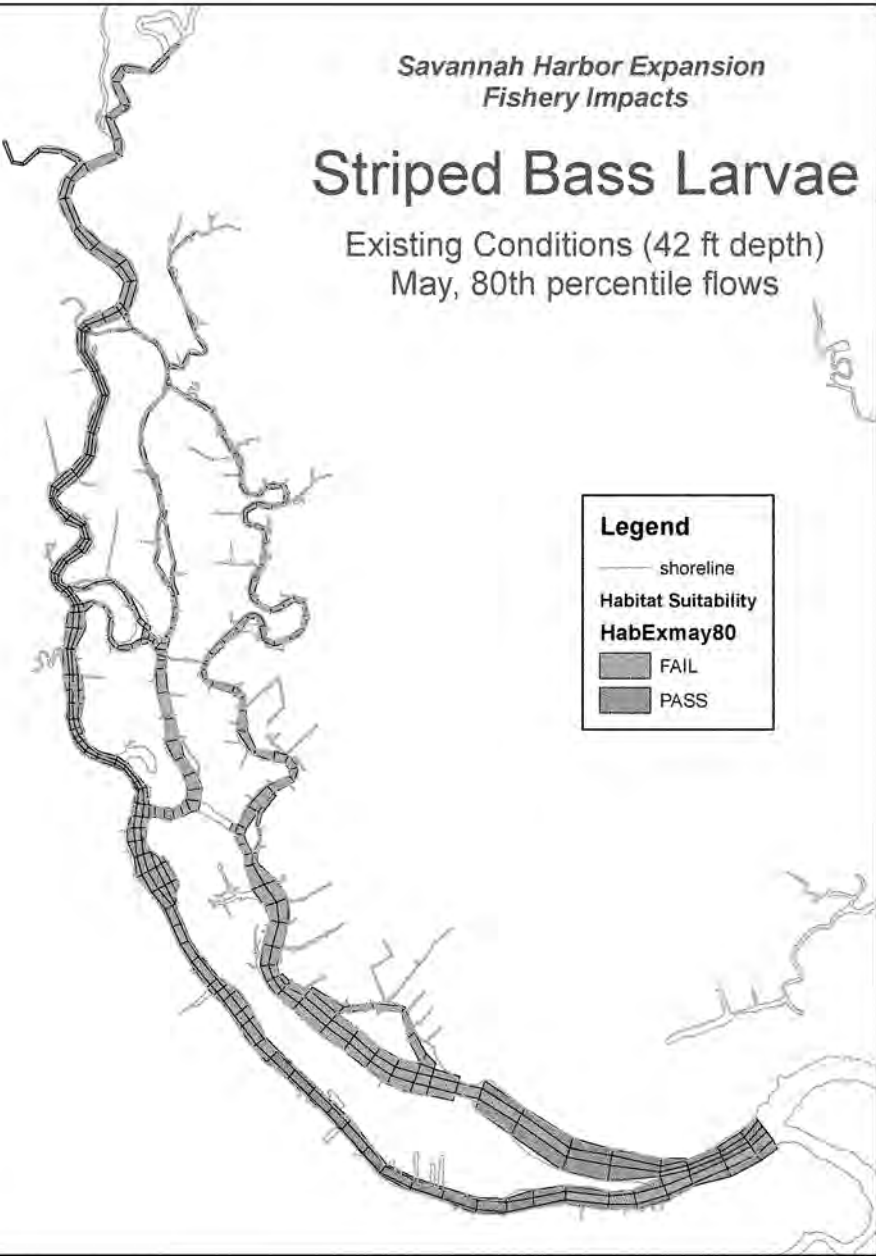
**Legend**

— shoreline

**Habitat Suitability**

**HabExmay80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | FAIL |
|  | PASS |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

Existing Conditions (42 ft depth)  
April, 20th percentile flows

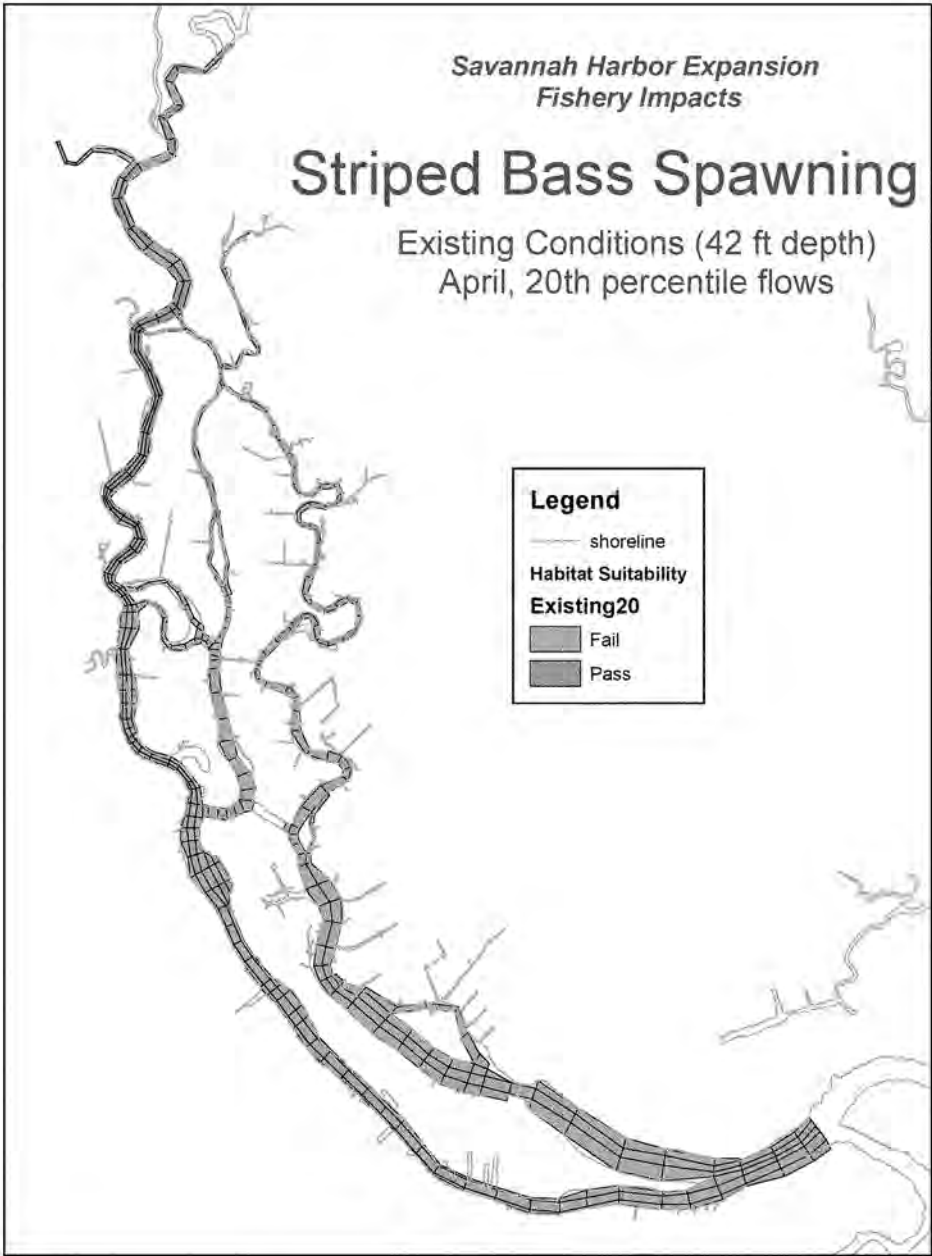
**Legend**

— shoreline

**Habitat Suitability**

**Existing20**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | Fail |
|  | Pass |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

Existing Conditions (42 ft depth)  
April, 50th percentile flows

## Legend

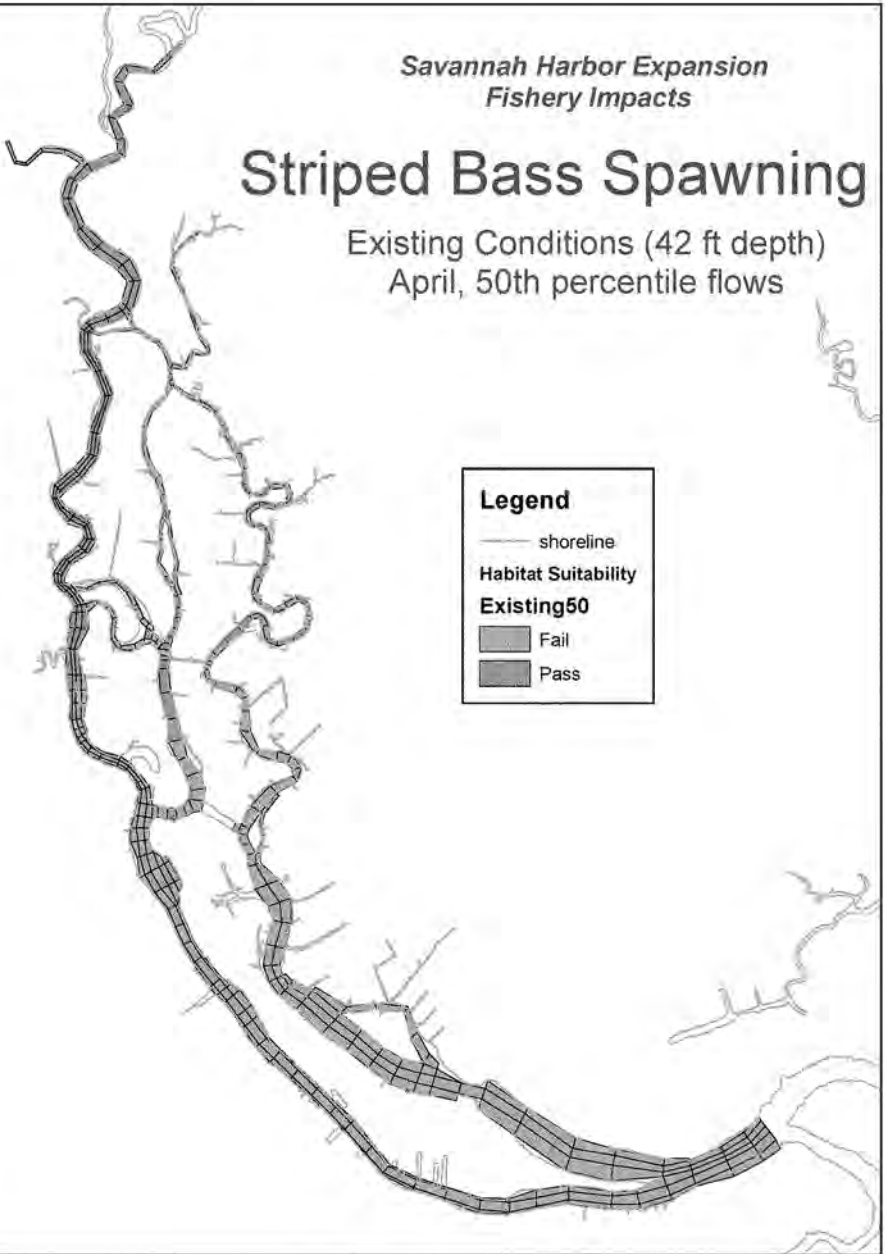
— shoreline

Habitat Suitability

Existing50

Fail

Pass



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

Existing Conditions (42 ft depth)  
April, 80th percentile flows

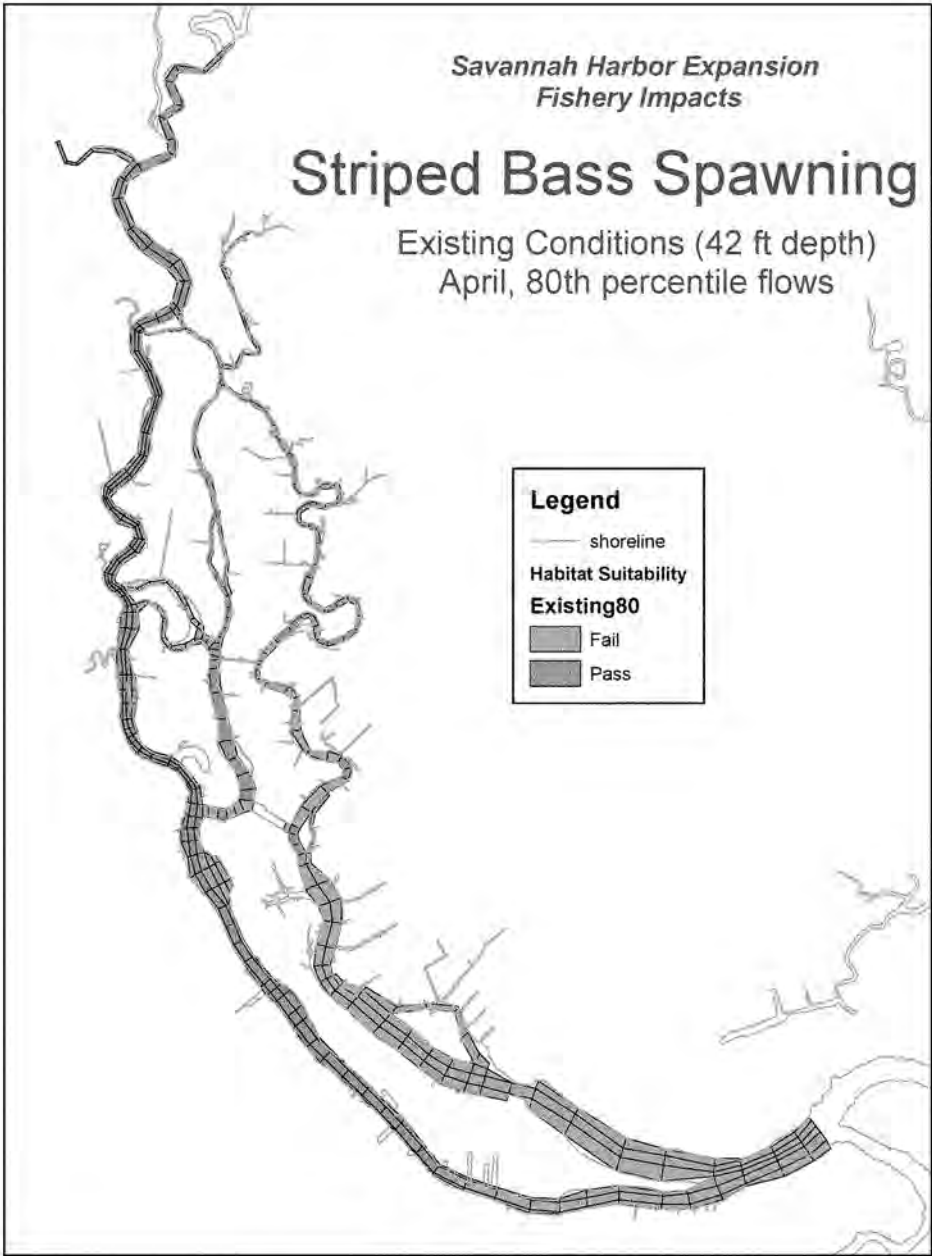
**Legend**

— shoreline

**Habitat Suitability**

**Existing80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | Fail |
|  | Pass |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Juveniles

Existing Conditions (42 ft depth)  
January, 50th percentile flows

**Legend**

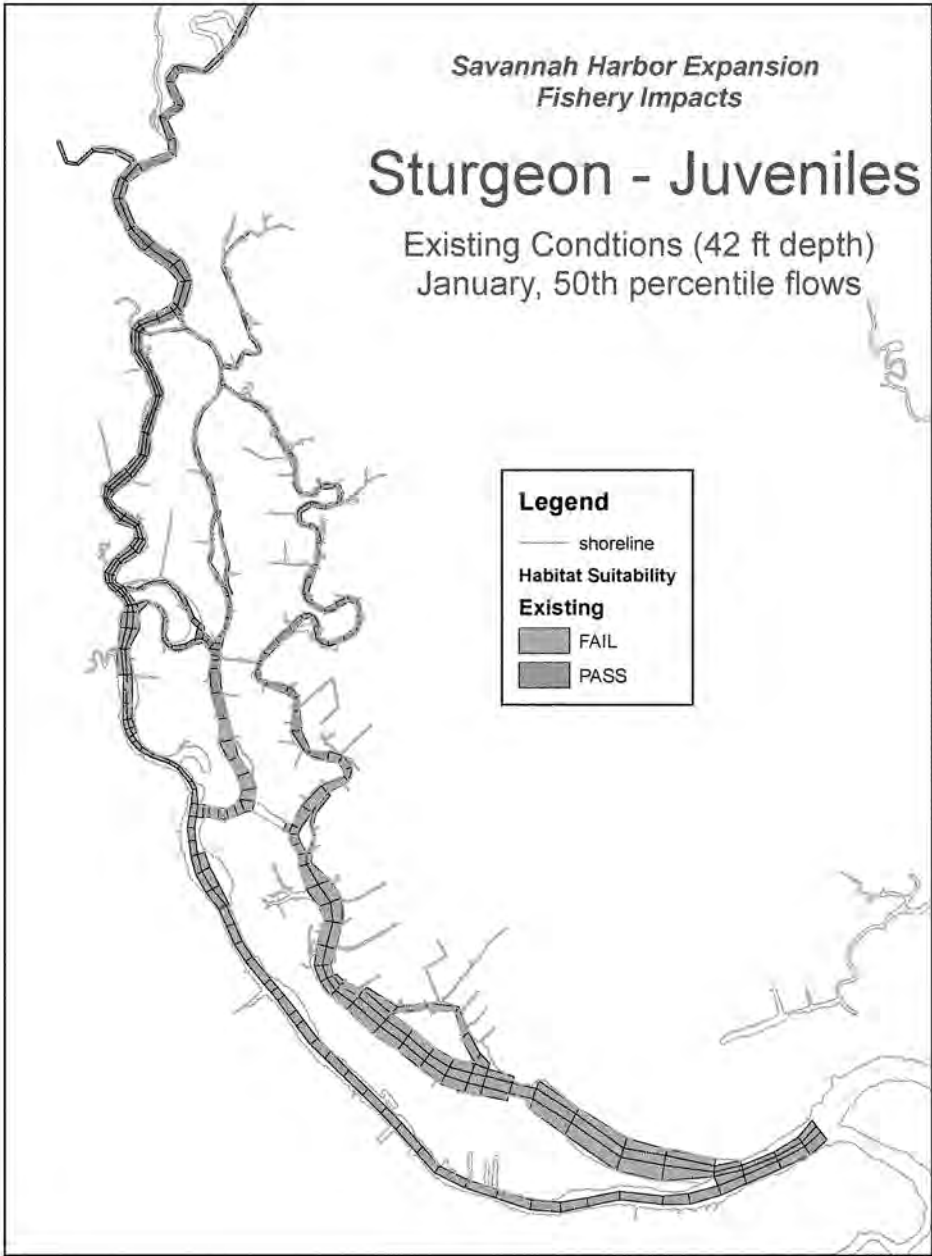
— shoreline

**Habitat Suitability**

**Existing**

FAIL

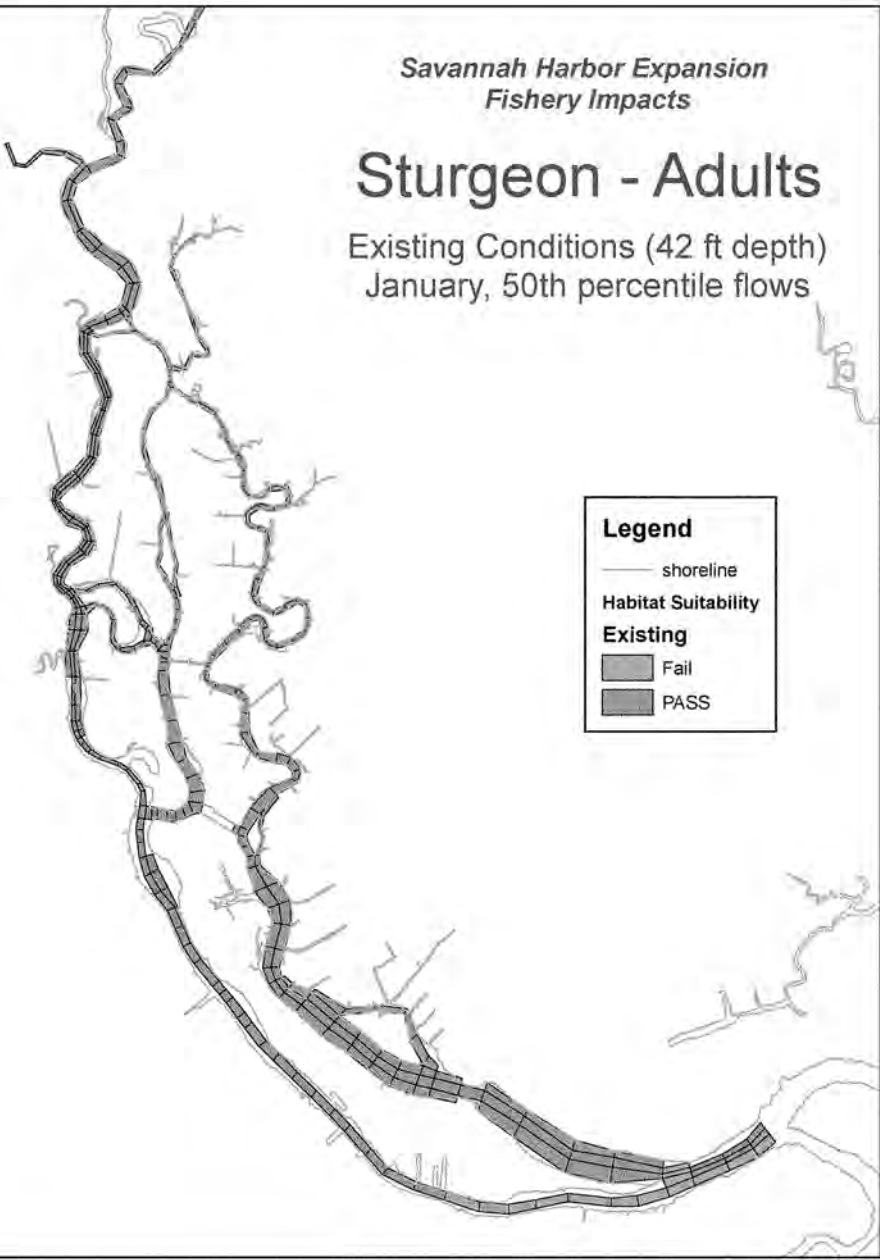
PASS



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Adults

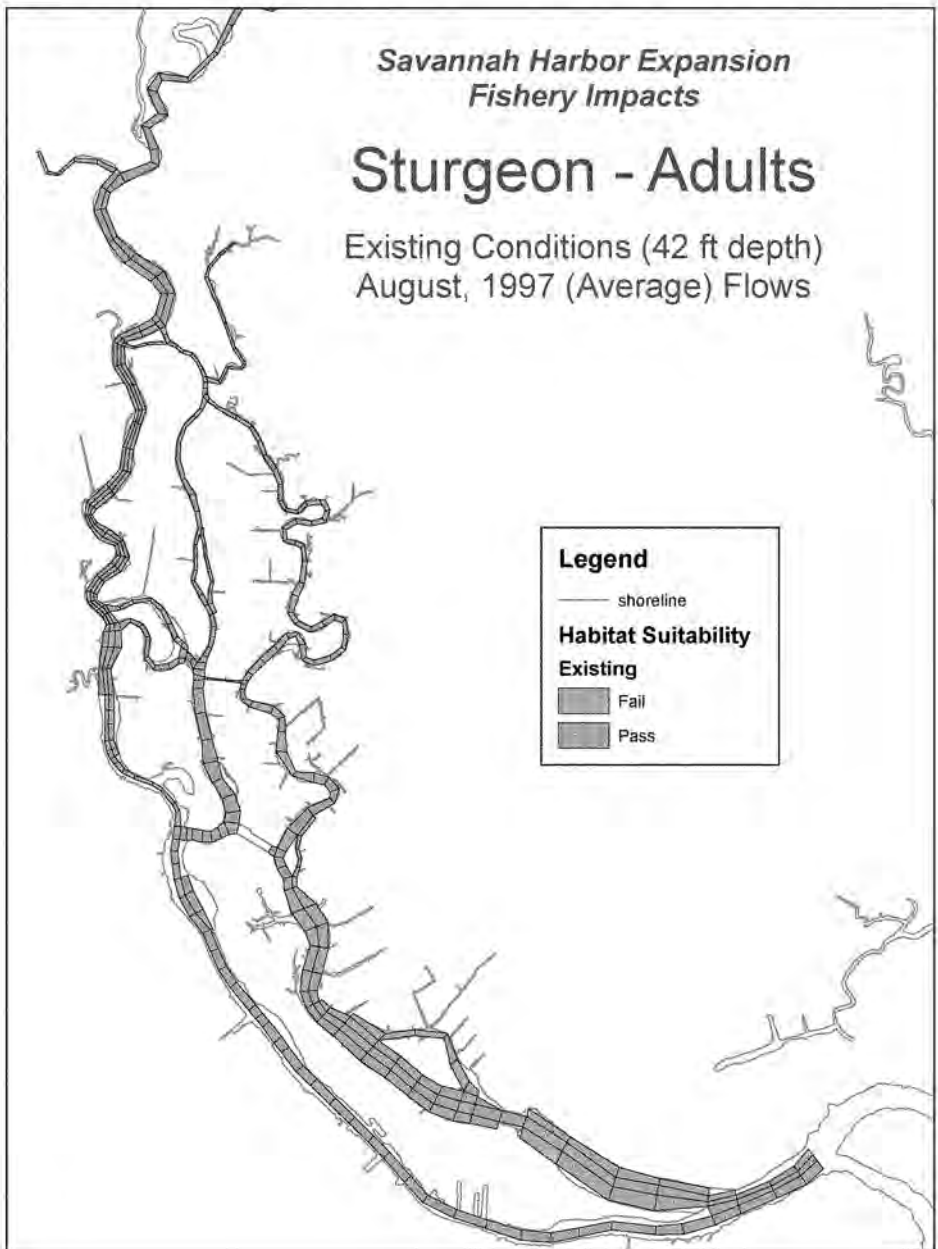
Existing Conditions (42 ft depth)  
January, 50th percentile flows



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

Existing Conditions (42 ft depth)  
August, 1997 (Average) Flows

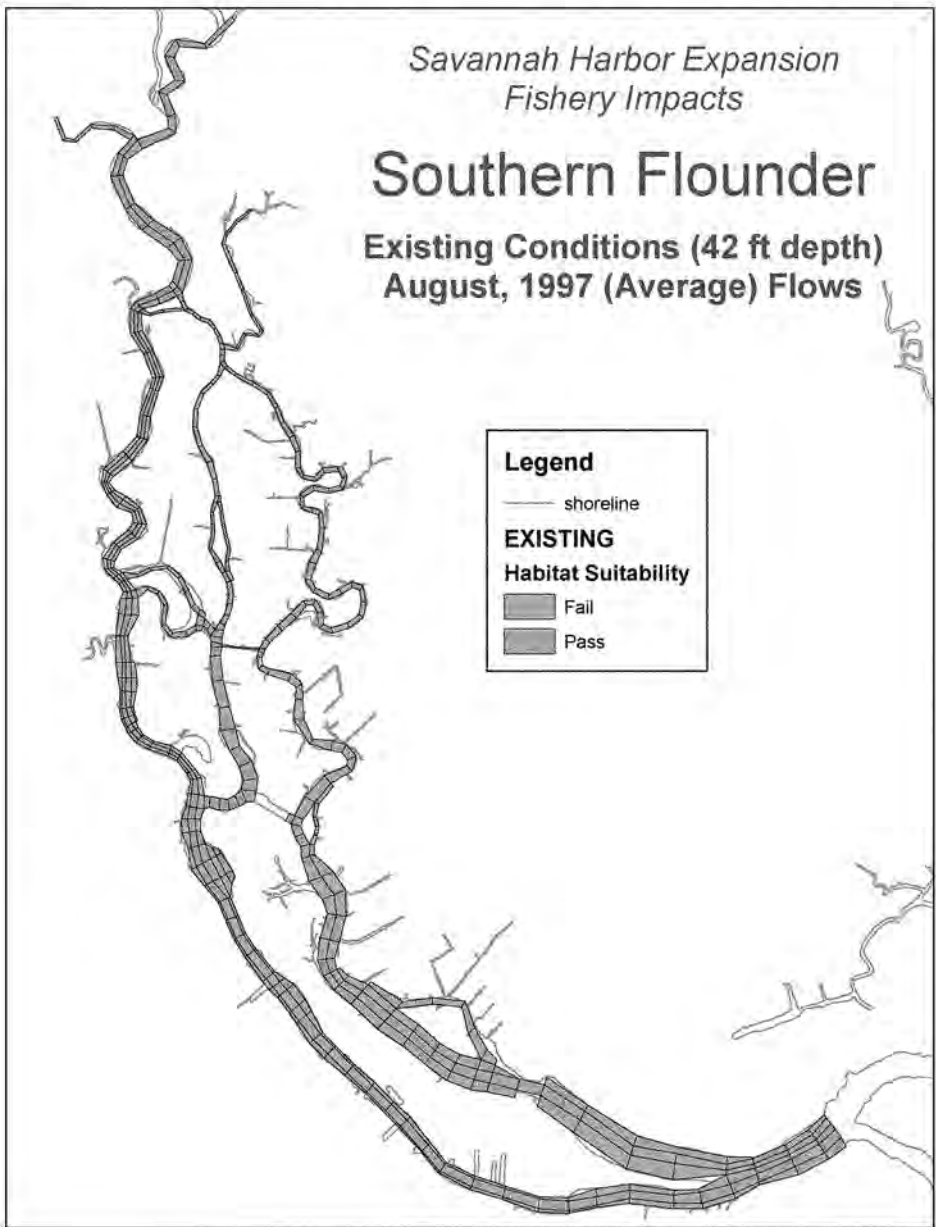




*Savannah Harbor Expansion  
Fishery Impacts*

## Southern Flounder

Existing Conditions (42 ft depth)  
August, 1997 (Average) Flows



# **44 ft Channel Depth**

## *Mitigation Plan 6b*

*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

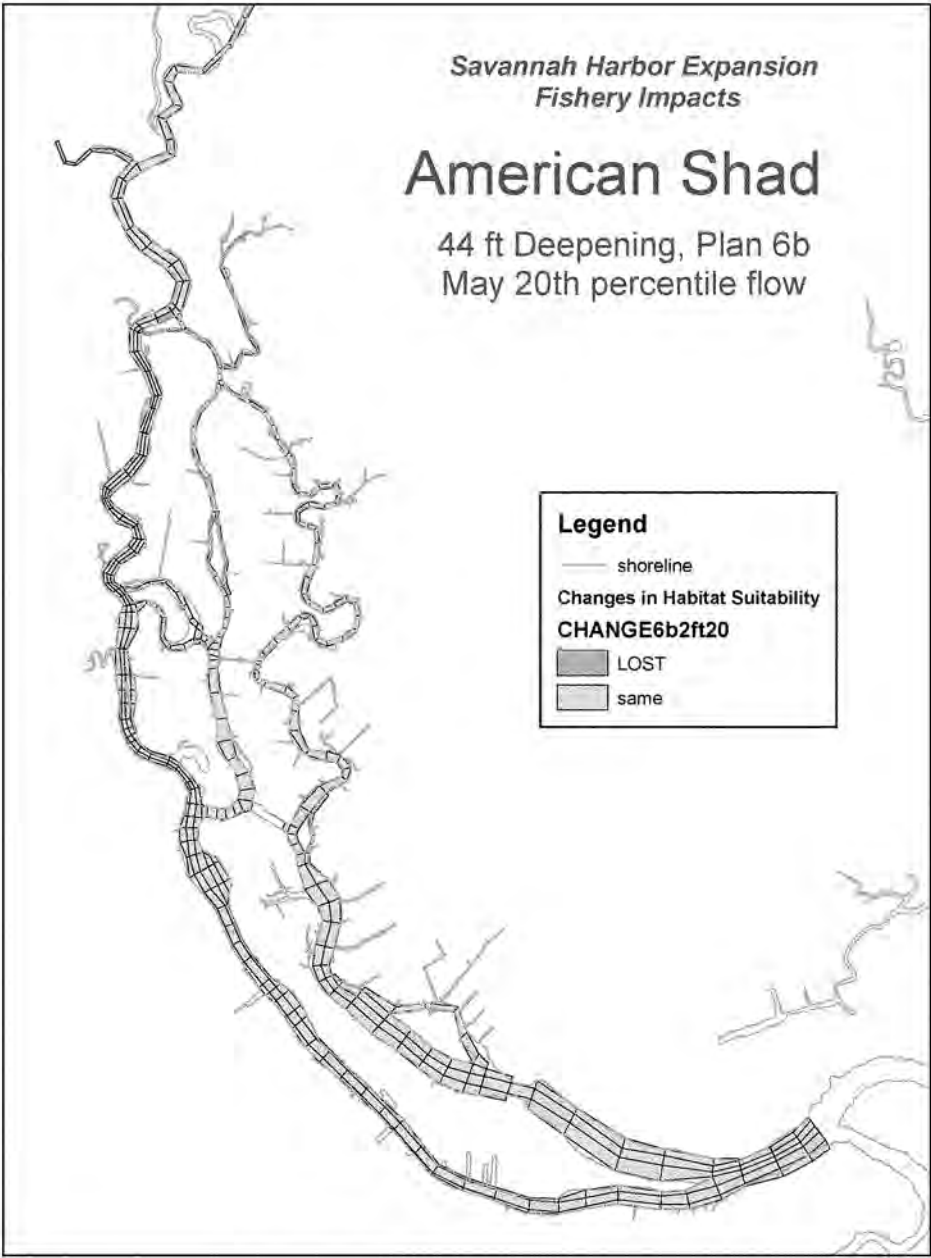
44 ft Deepening, Plan 6b  
May 20th percentile flow

**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6b2ft20**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

44 ft Deepening, Plan 6b  
May 50th percentile flow

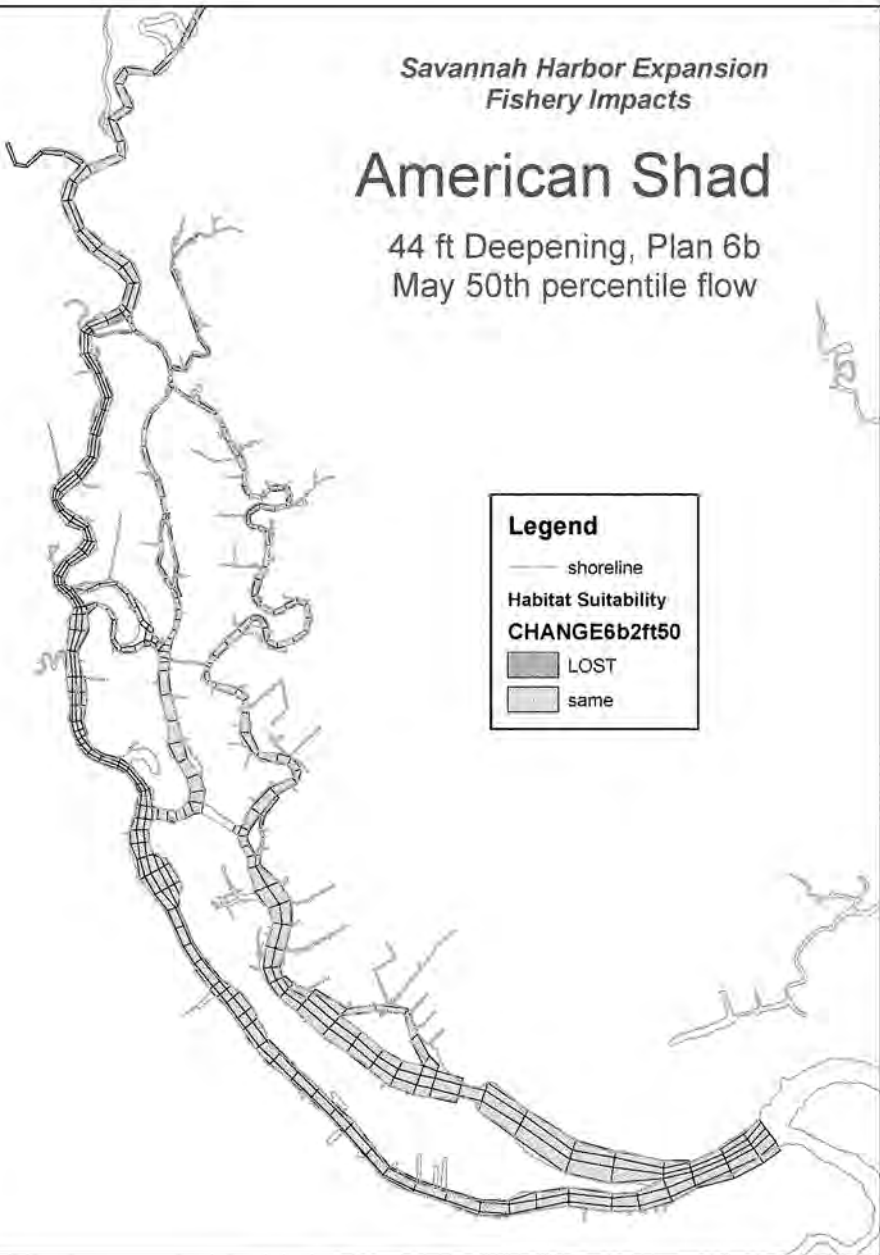
**Legend**

— shoreline

**Habitat Suitability**

**CHANGE6b2ft50**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

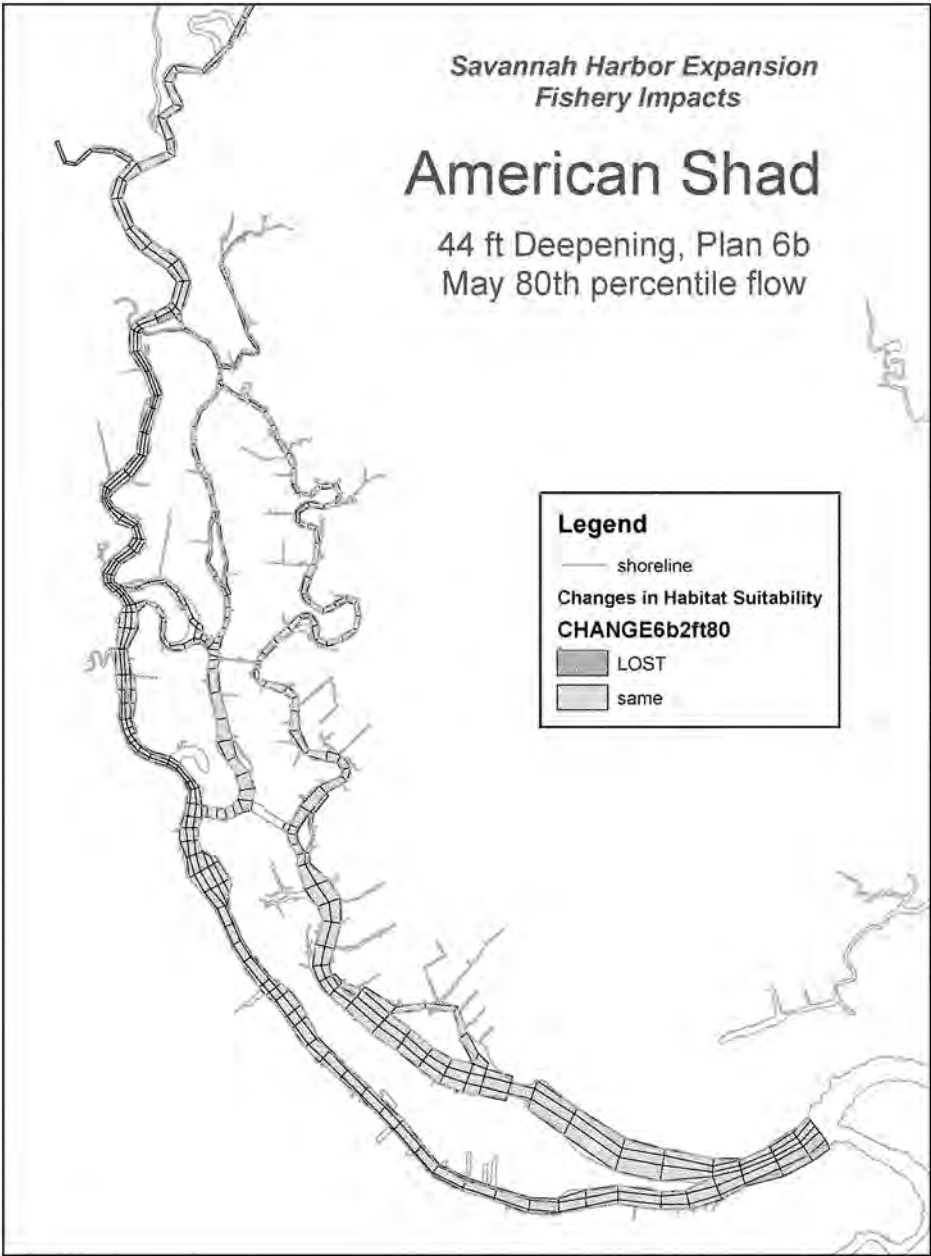
44 ft Deepening, Plan 6b  
May 80th percentile flow

**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6b2ft80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

44 ft Deepening, Plan 6b  
January 50th percentile flow

### Legend

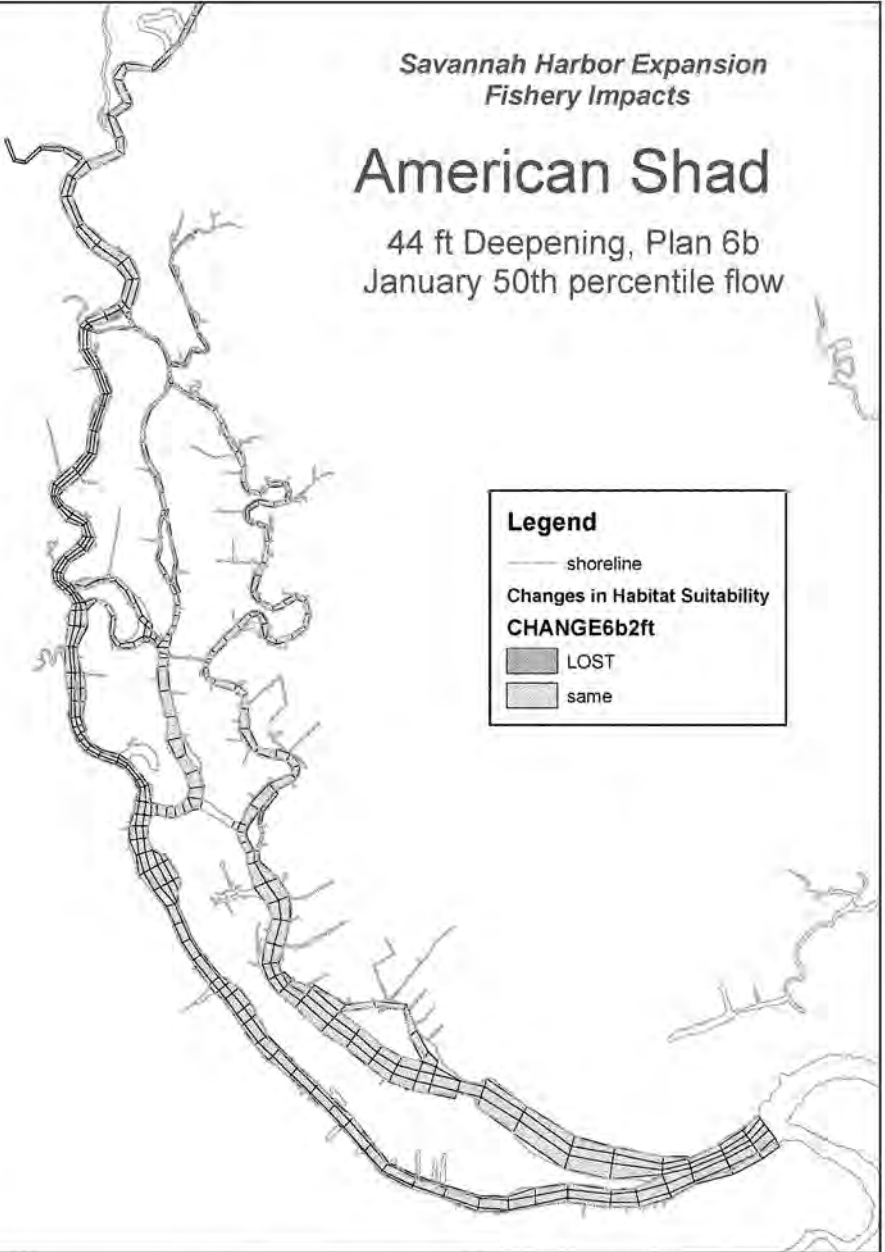
— shoreline

Changes in Habitat Suitability

**CHANGE6b2ft**

■ LOST

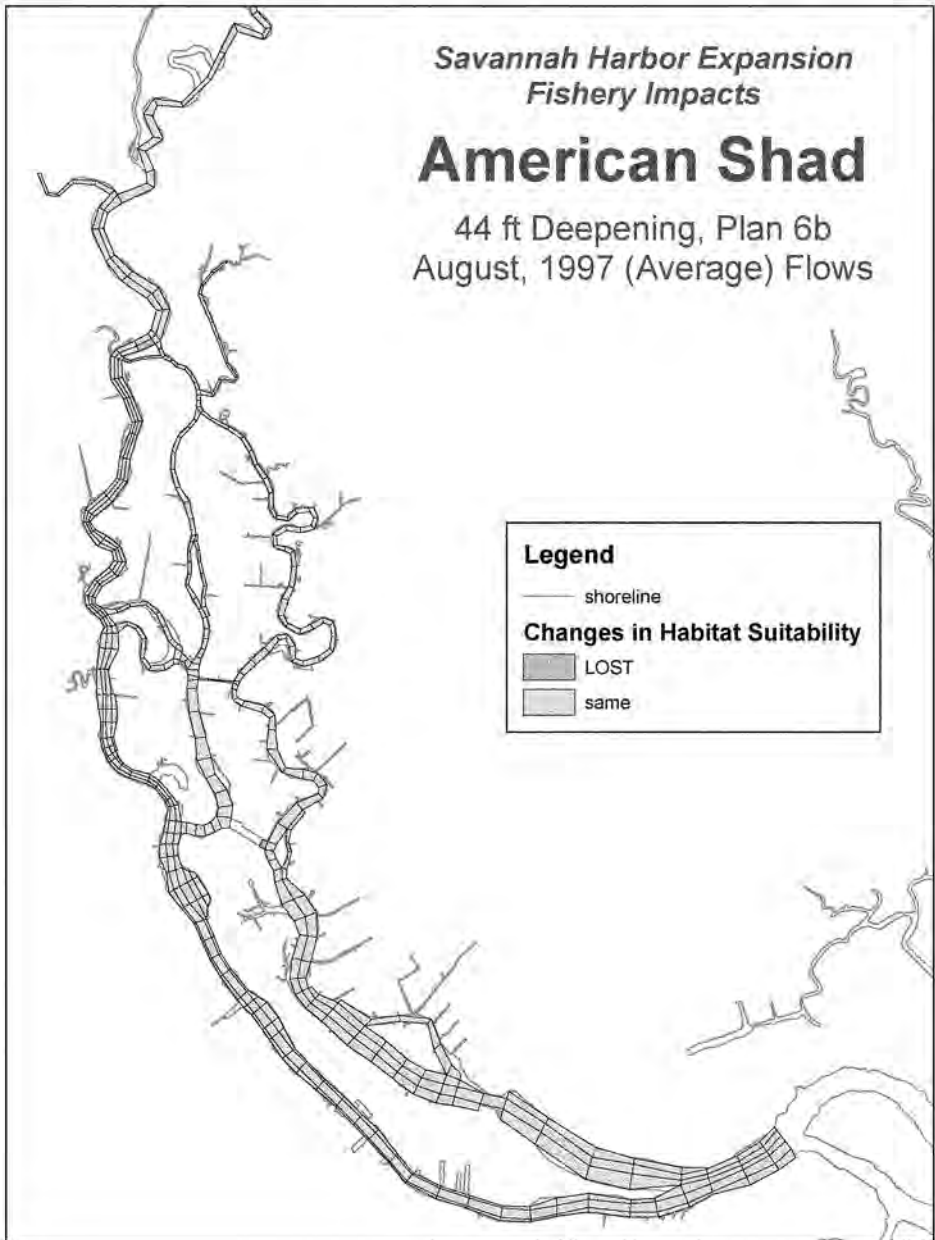
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

44 ft Deepening, Plan 6b  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

44 ft Deepening, Plan 6b  
April, 20th percentile flows

## Legend

— shoreline

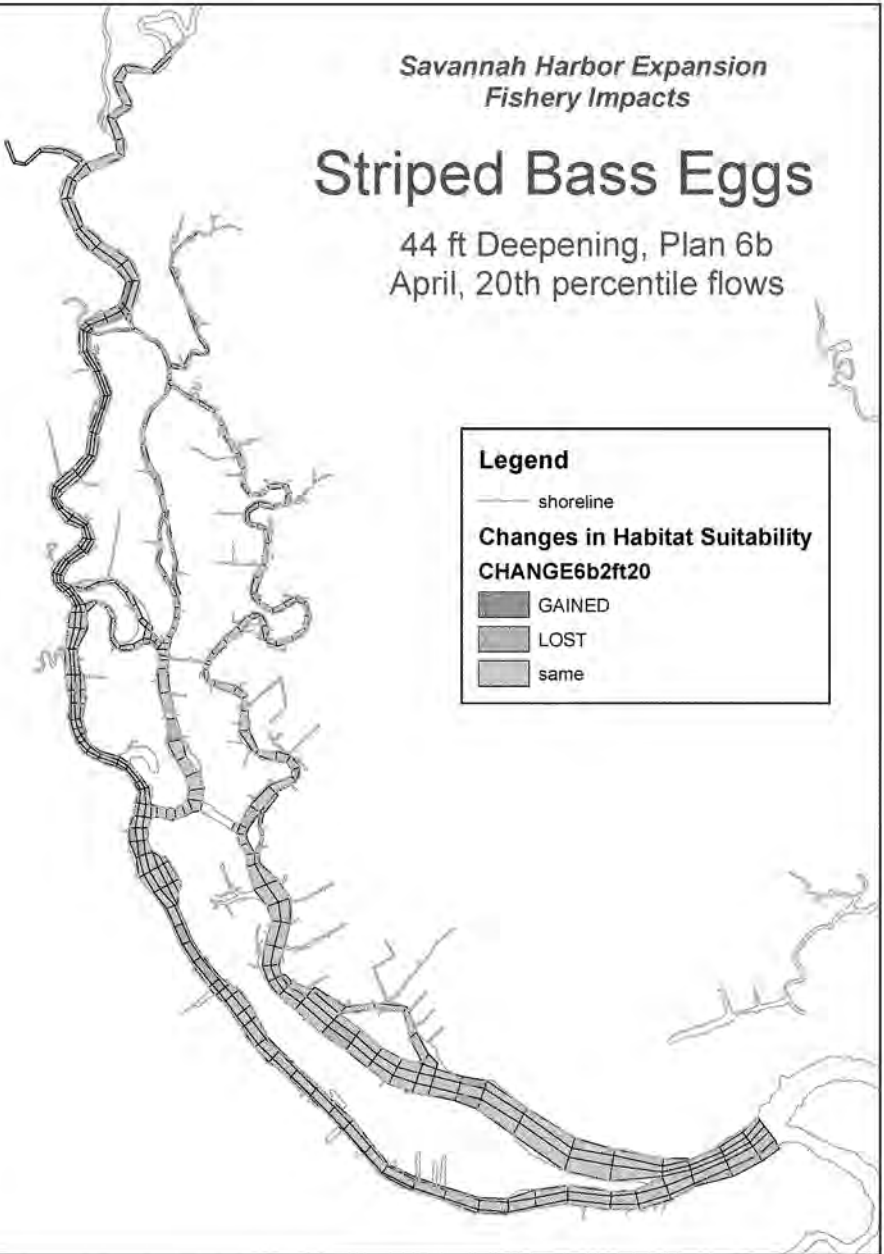
### Changes in Habitat Suitability

**CHANGE6b2ft20**

■ GAINED

■ LOST

■ same





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

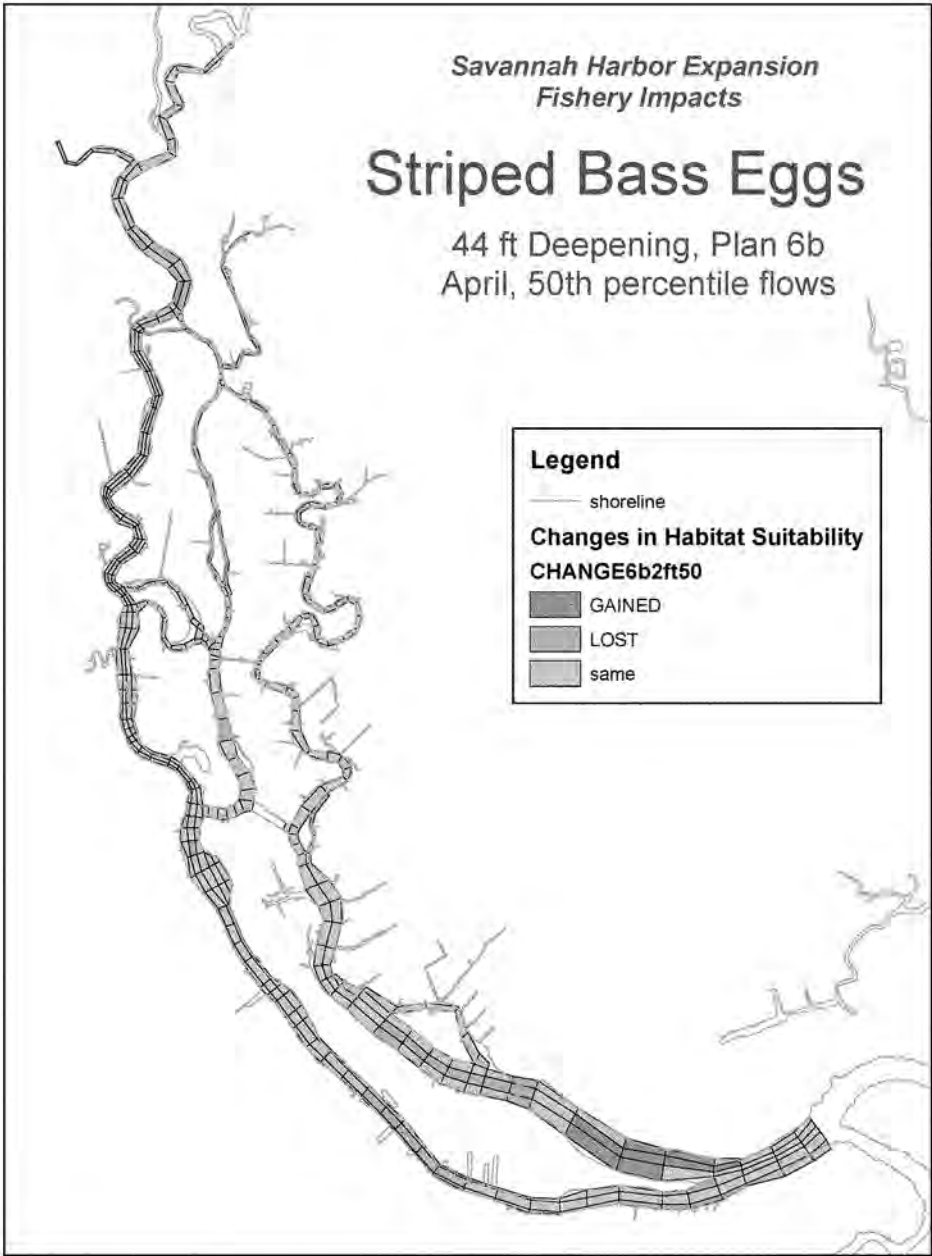
44 ft Deepening, Plan 6b  
April, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6b2ft50**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

44 ft Deepening, Plan 6b  
April, 80th percentile flows

## Legend

— shoreline

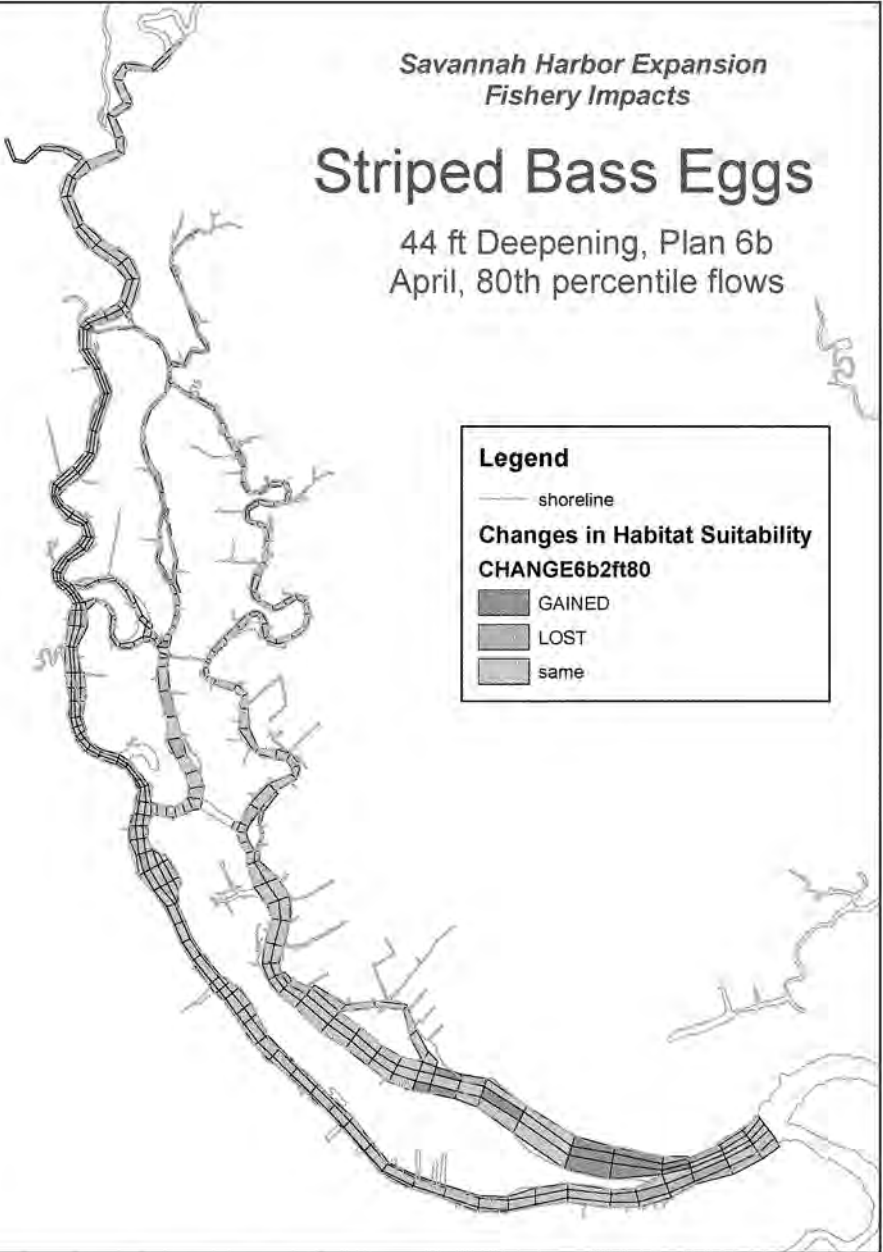
### Changes in Habitat Suitability

**CHANGE6b2ft80**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

44 ft Deepening, Plan 6b  
May, 20th percentile flows

## Legend

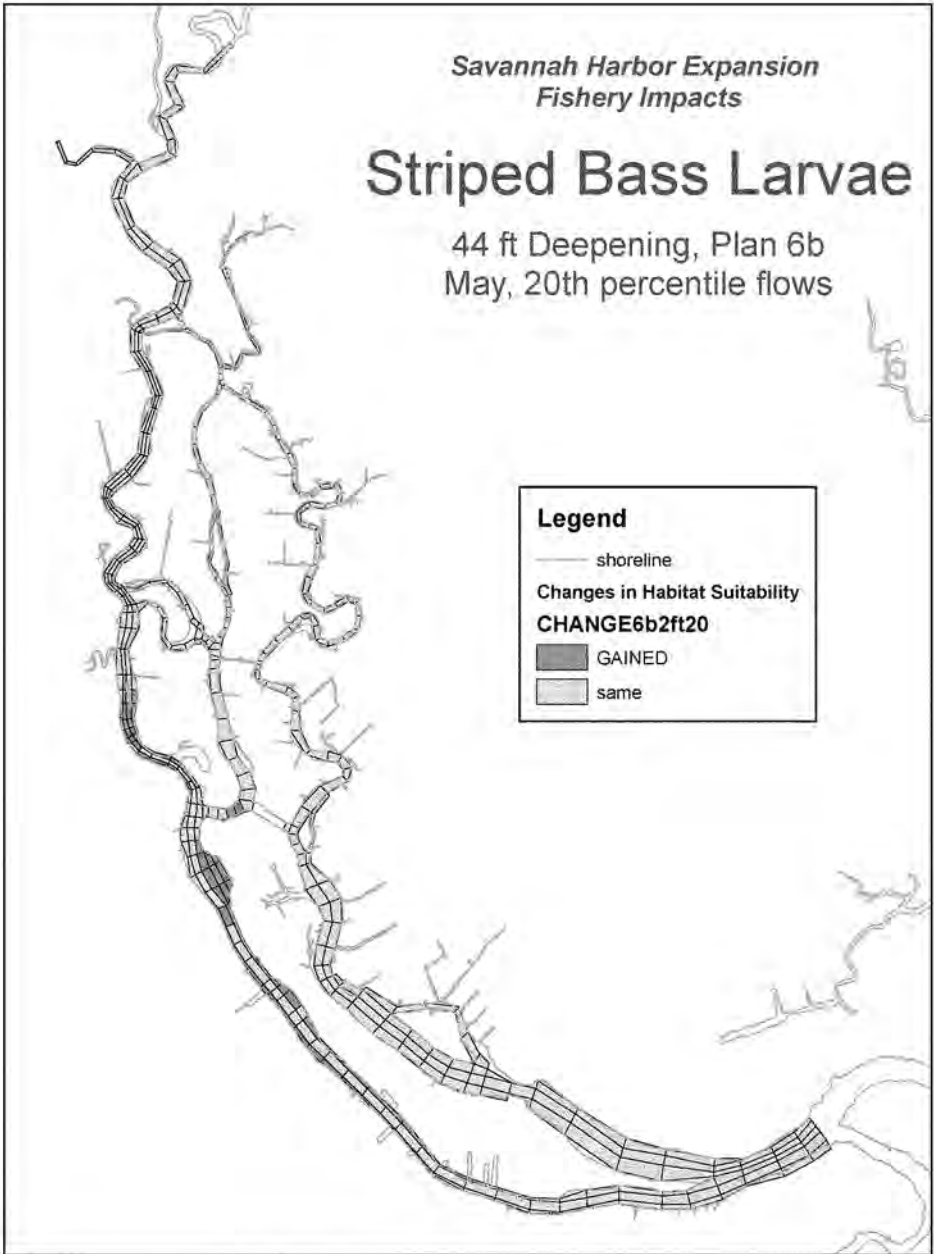
— shoreline

Changes in Habitat Suitability

**CHANGE6b2ft20**

■ GAINED

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

44 ft Deepening, Plan 6b  
May, 50th percentile flows

## Legend

— shoreline

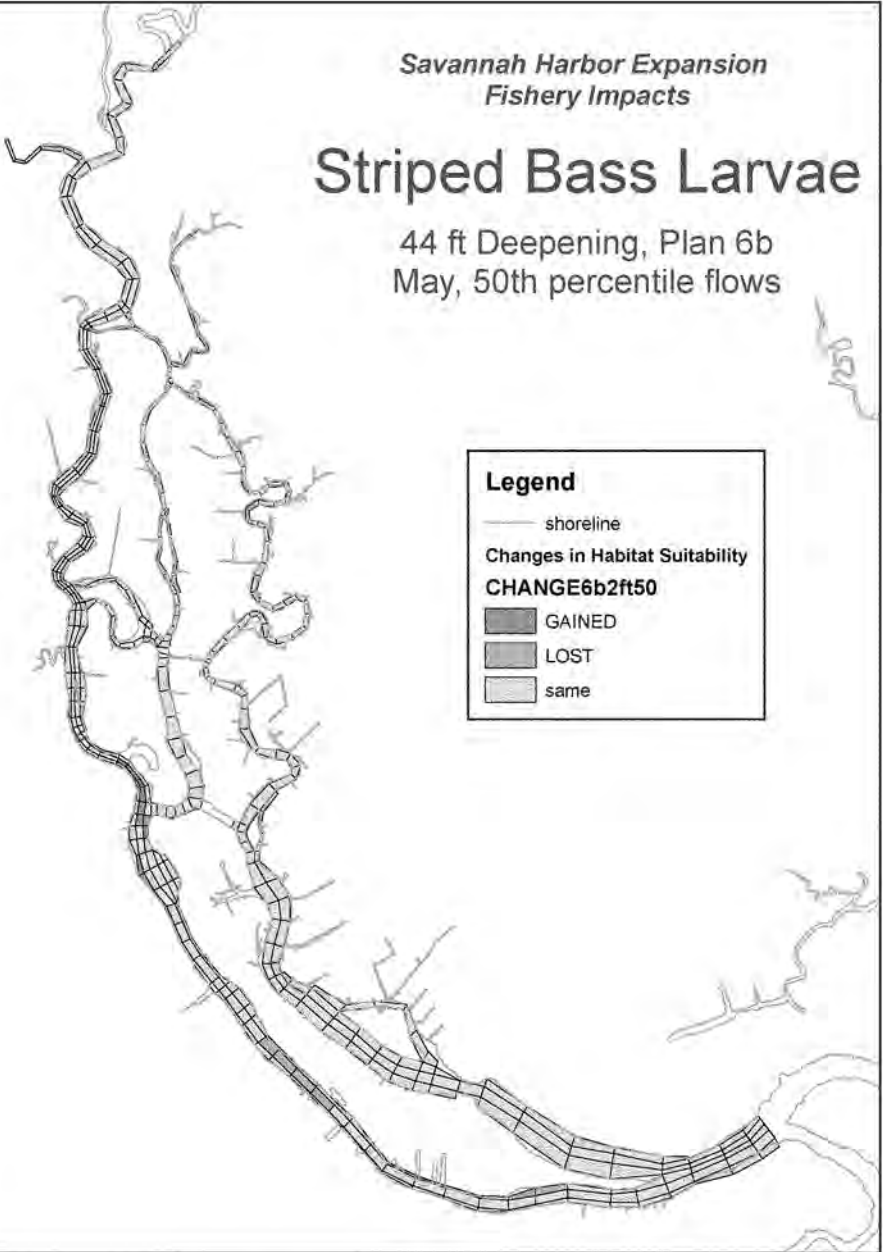
Changes in Habitat Suitability

**CHANGE6b2ft50**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

44 ft Deepening, Plan 6b  
May, 80th percentile flows

## Legend

— shoreline

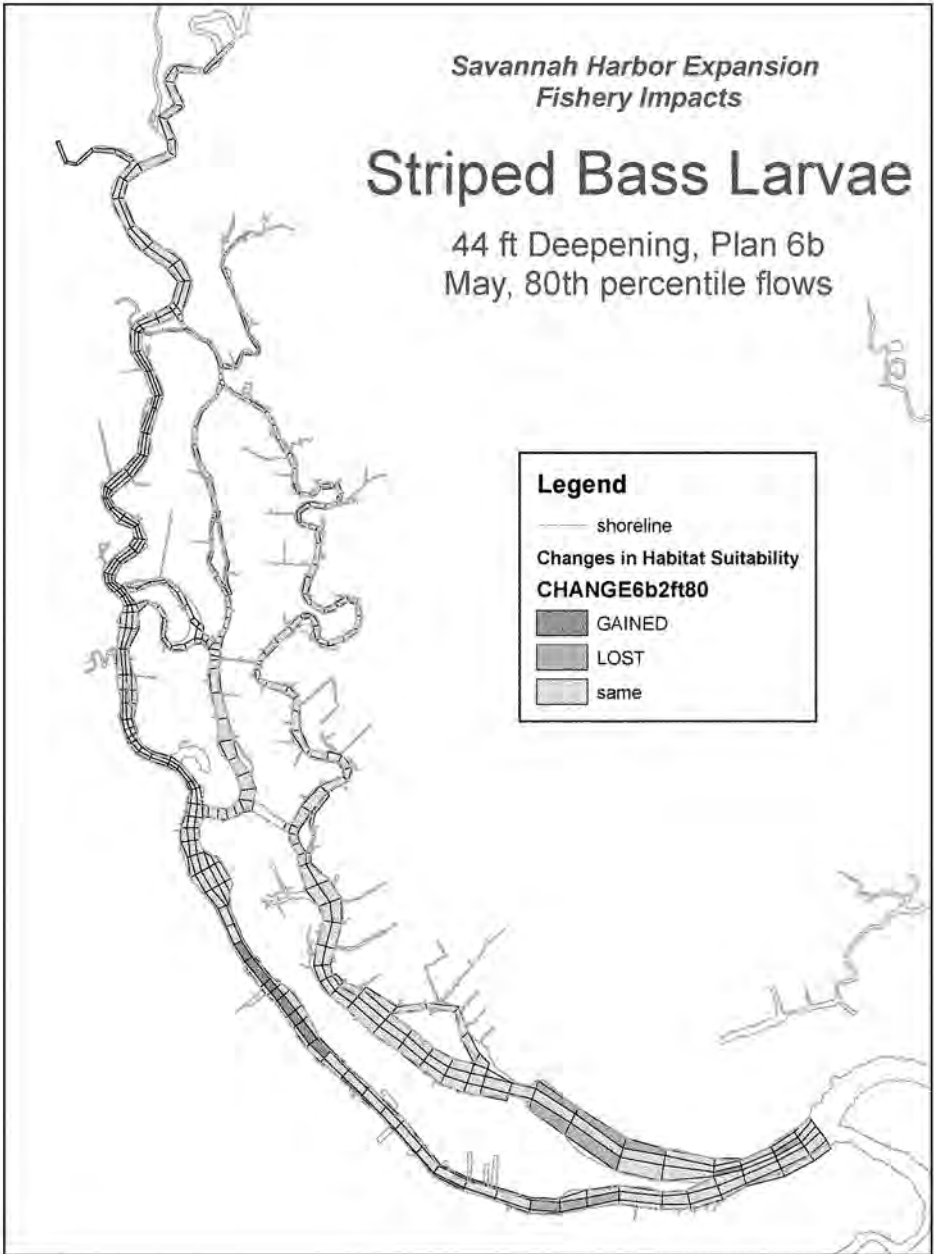
Changes in Habitat Suitability

**CHANGE6b2ft80**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

44 ft Deepening, Plan 6b  
April, 20th percentile flows

## Legend

— shoreline

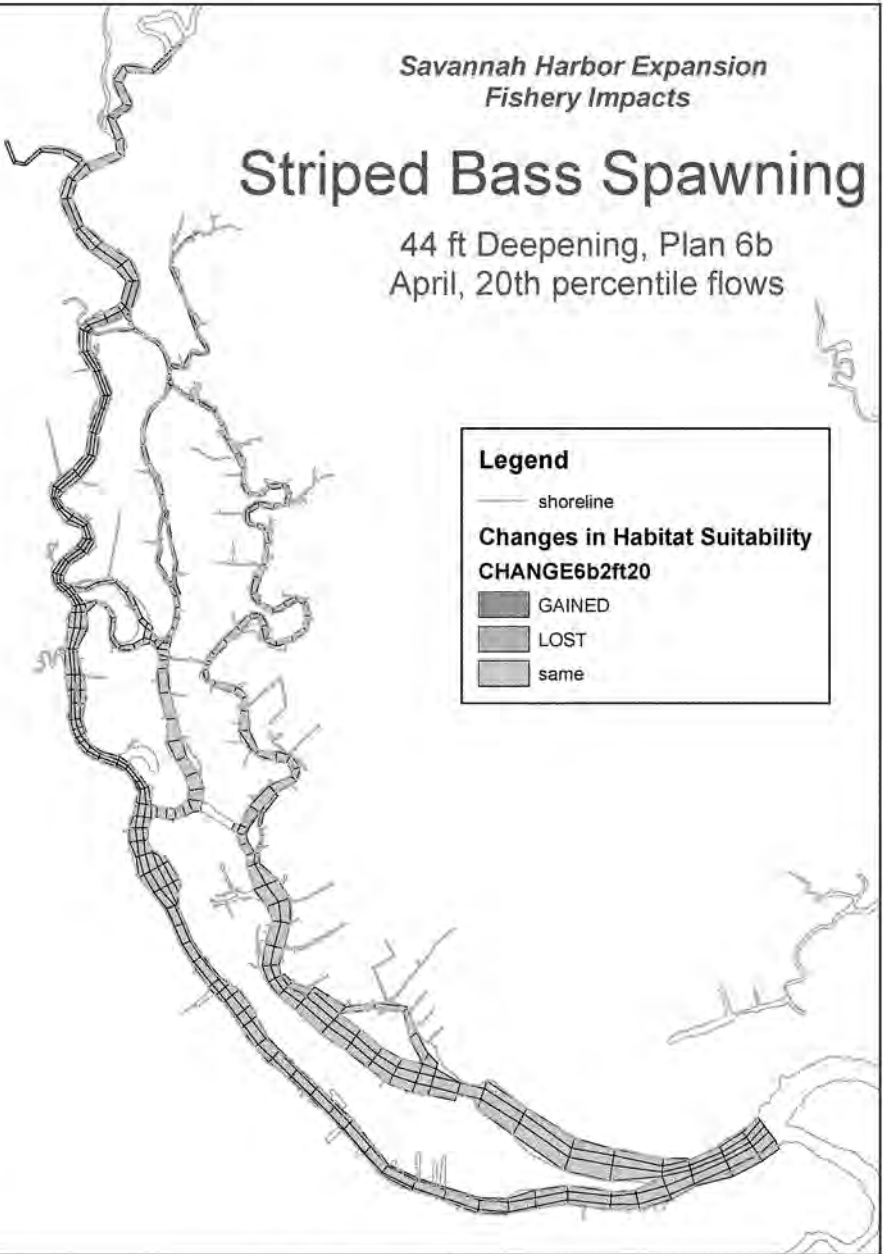
### Changes in Habitat Suitability

**CHANGE6b2ft20**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

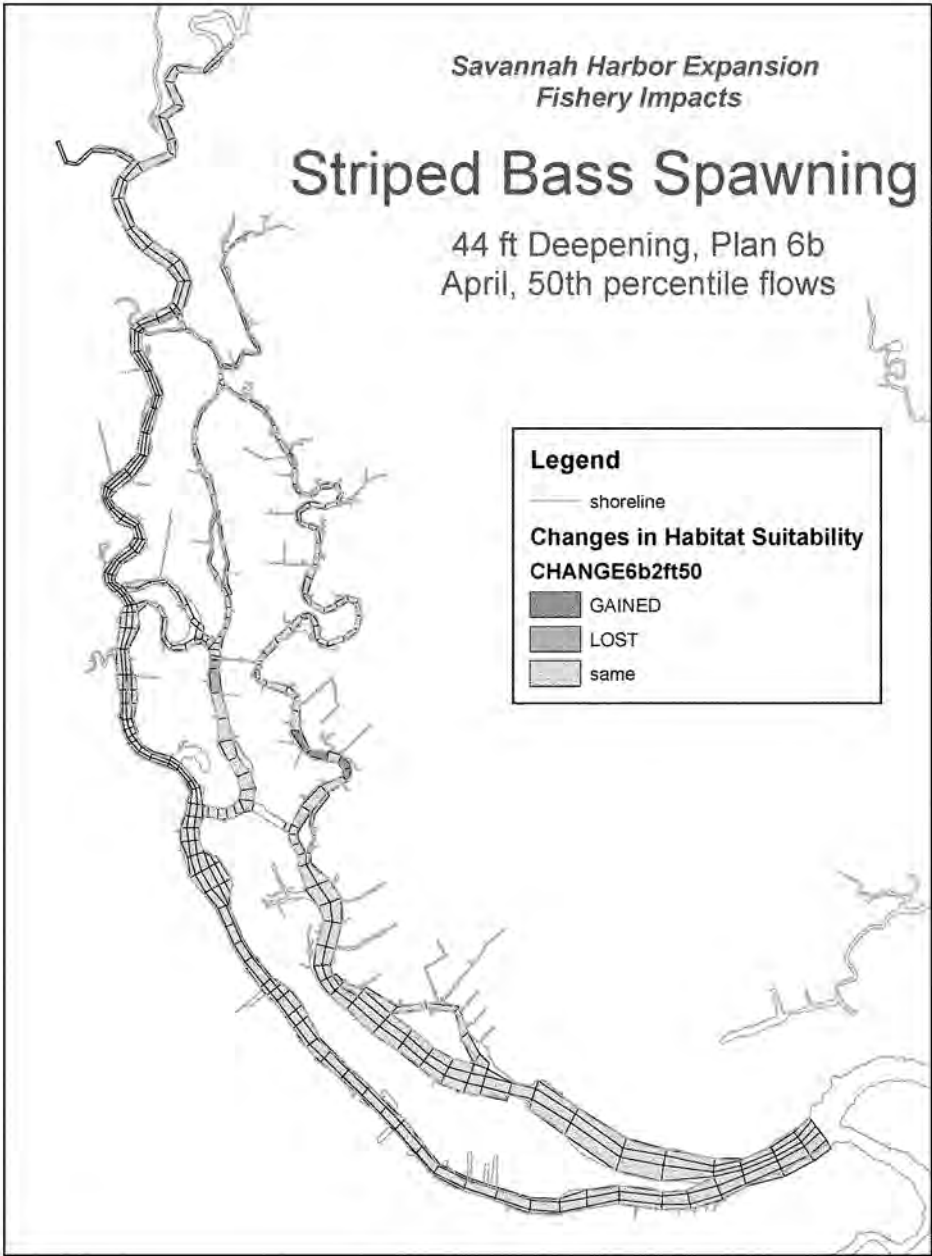
44 ft Deepening, Plan 6b  
April, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6b2ft50**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

44 ft Deepening, Plan 6b  
April, 80th percentile flows

## Legend

— shoreline

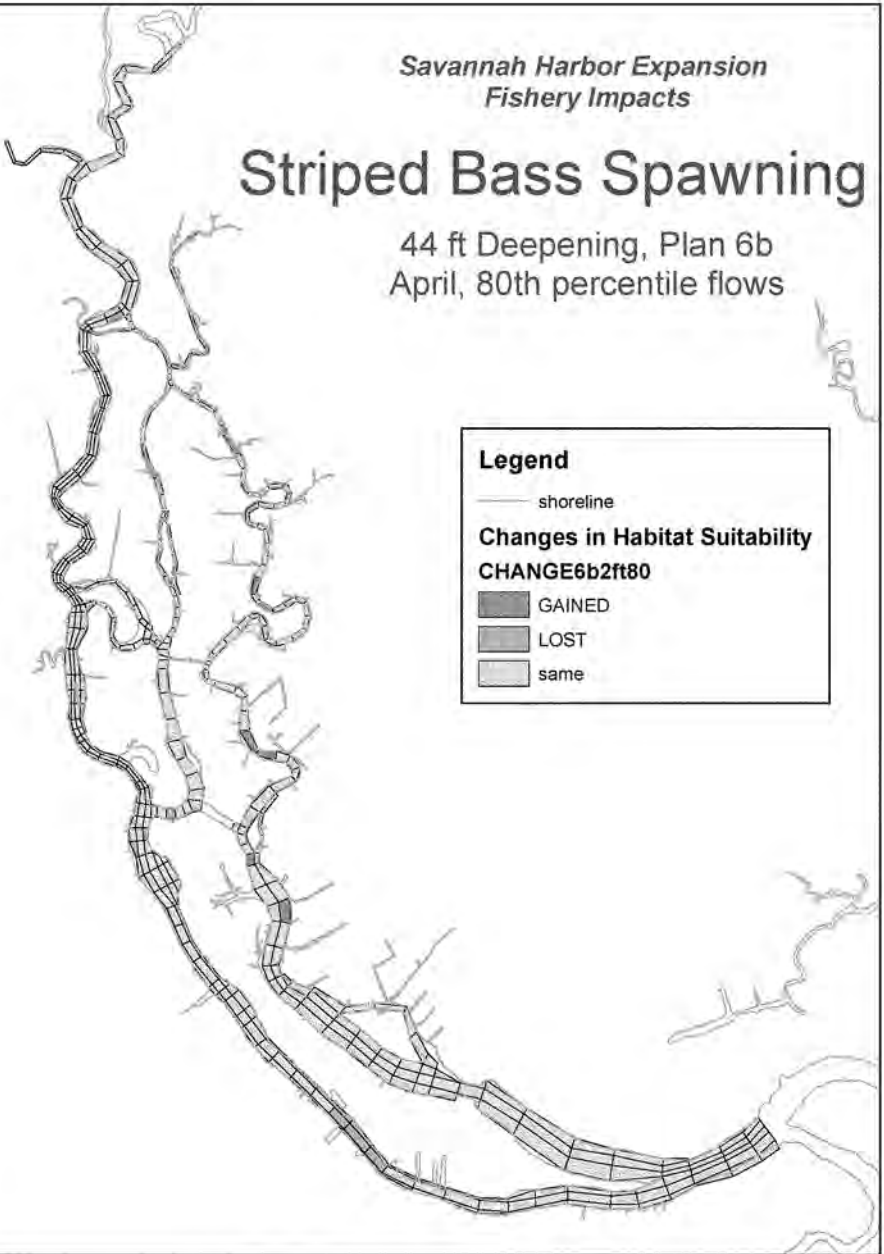
### Changes in Habitat Suitability

**CHANGE6b2ft80**

■ GAINED

■ LOST

■ same





*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Juveniles

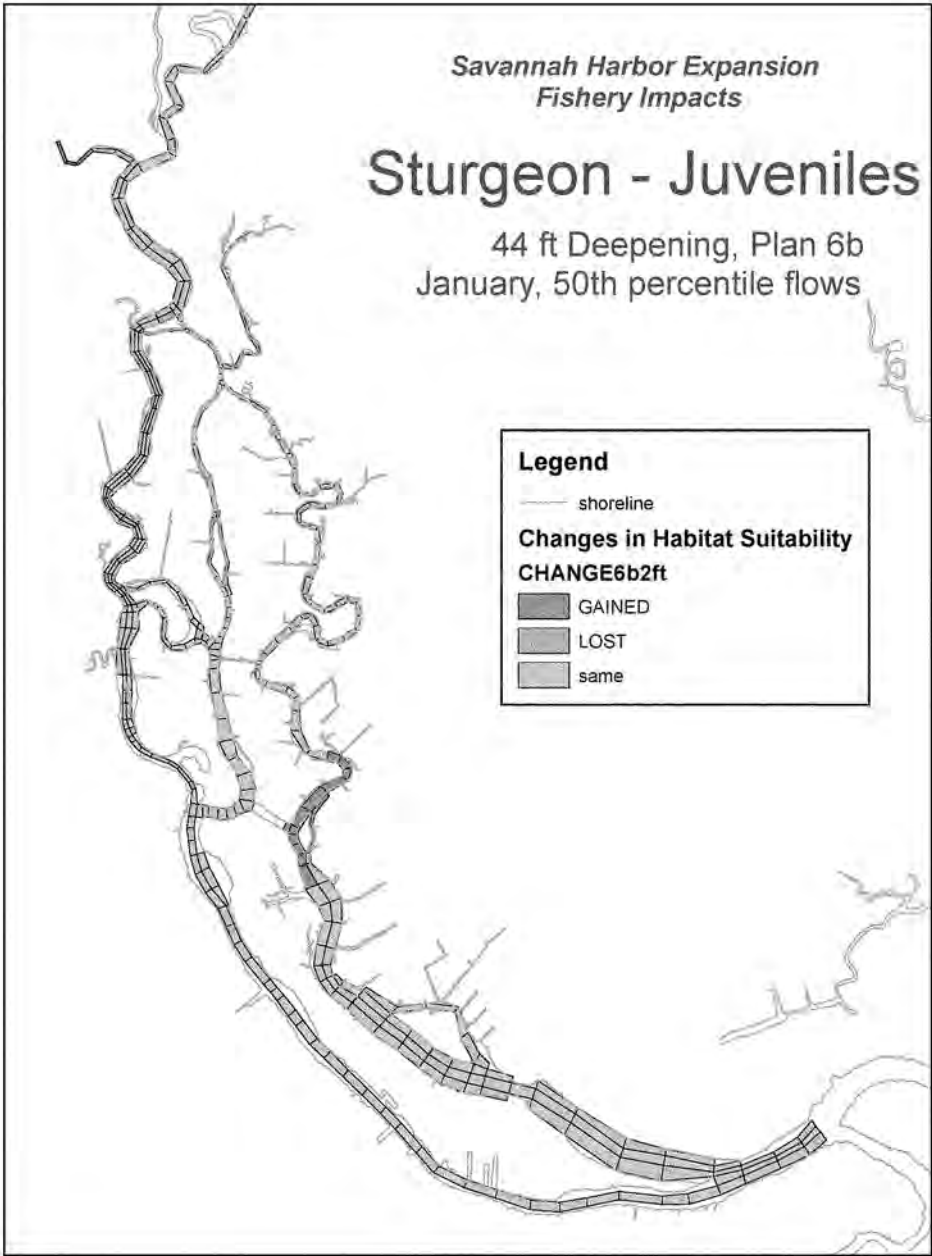
44 ft Deepening, Plan 6b  
January, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6b2ft**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Adults

44 ft Deepening, Plan 6b  
January, 50th percentile flows

**Legend**

— shoreline

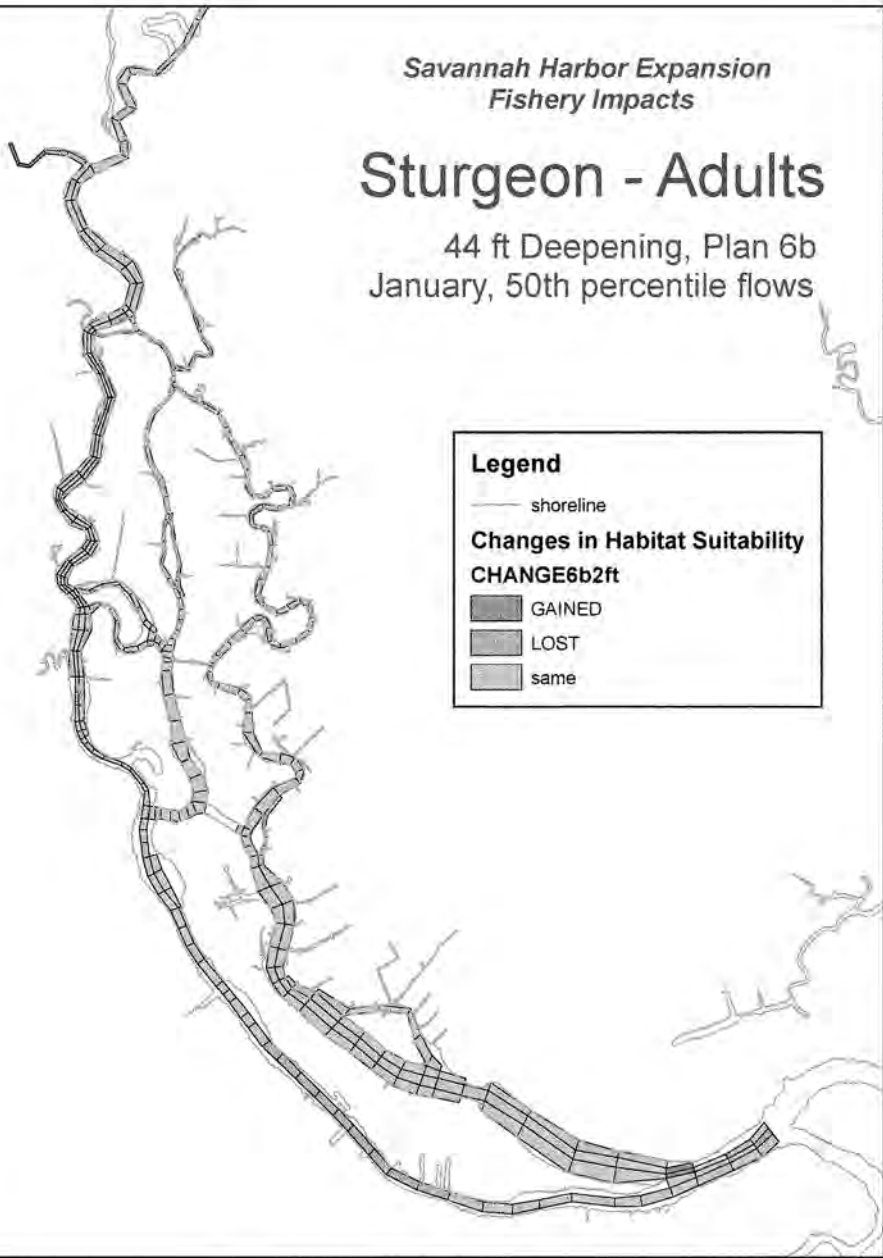
**Changes in Habitat Suitability**

**CHANGE6b2ft**

■ GAINED

■ LOST

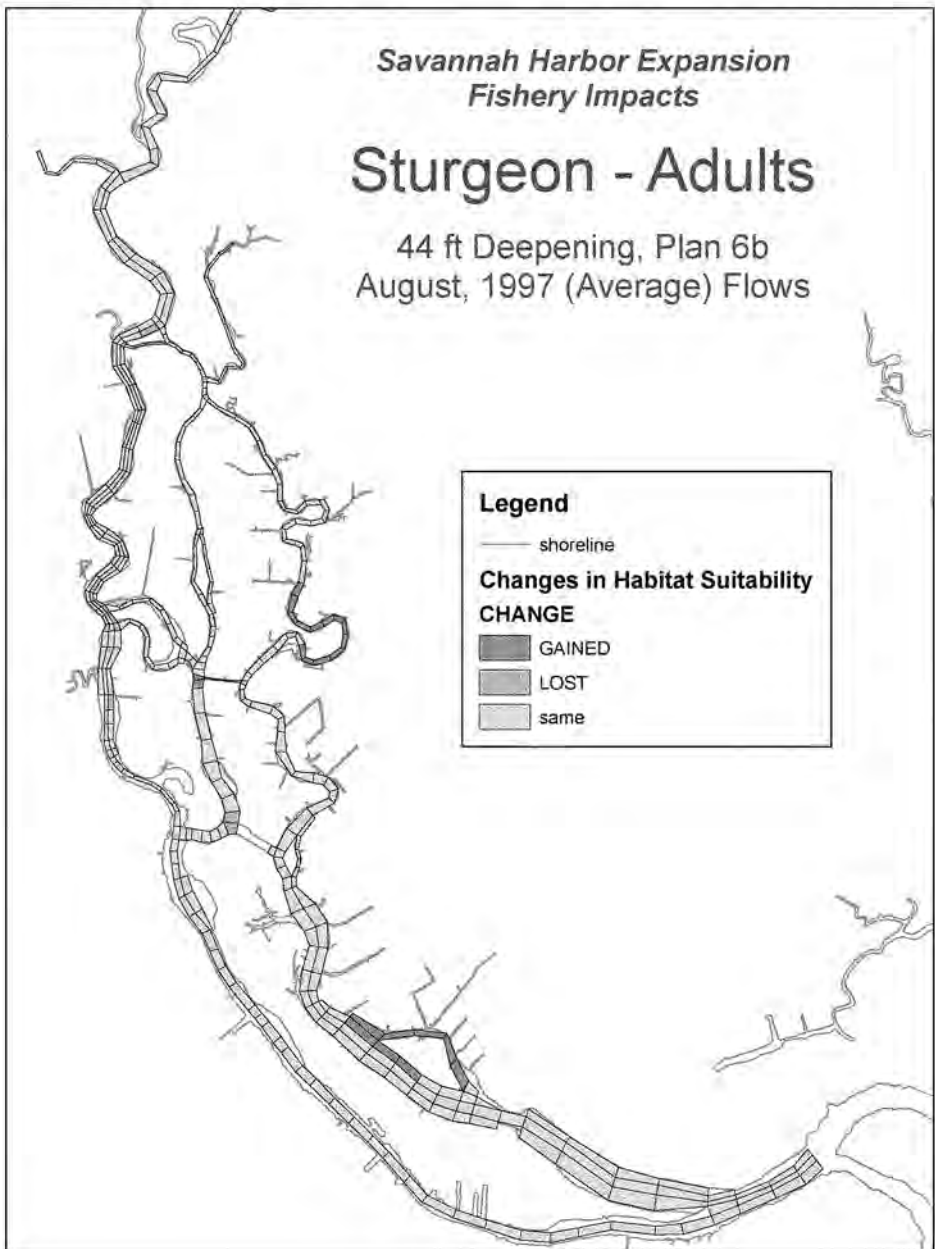
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

44 ft Deepening, Plan 6b  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

## Southern Flounder

44 ft Deepening, Plan 6b  
August, 1997 (Average) Flows

### Legend

— shoreline

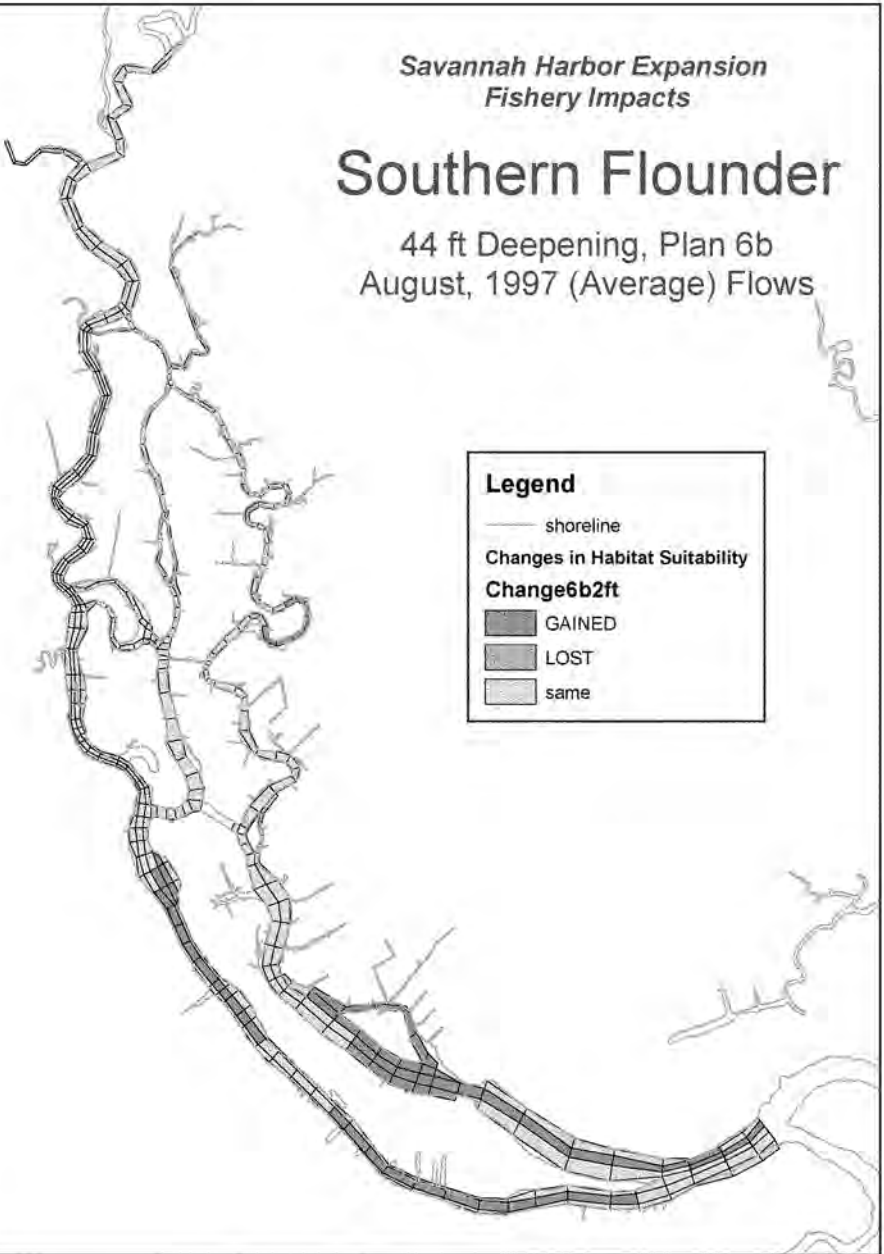
Changes in Habitat Suitability

**Change6b2ft**

■ GAINED

■ LOST

■ same



# **45 ft Channel Depth**

## *Mitigation Plan 6a*

*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

45 ft Deepening, Plan 6a  
May 20th percentile flow

### Legend

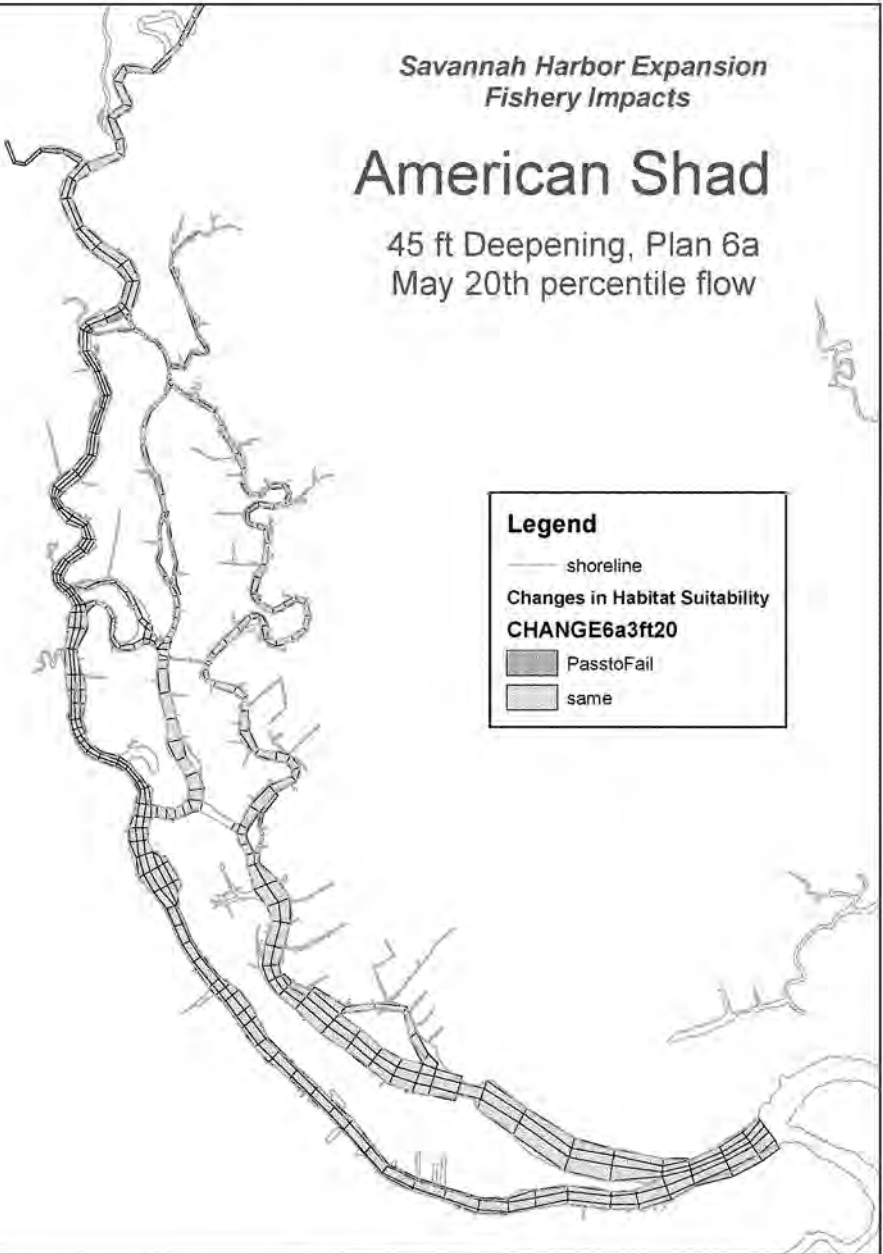
— shoreline

Changes in Habitat Suitability

**CHANGE6a3ft20**

PassToFail

same



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

45 ft Deepening, Plan 6a  
May 50th percentile flow

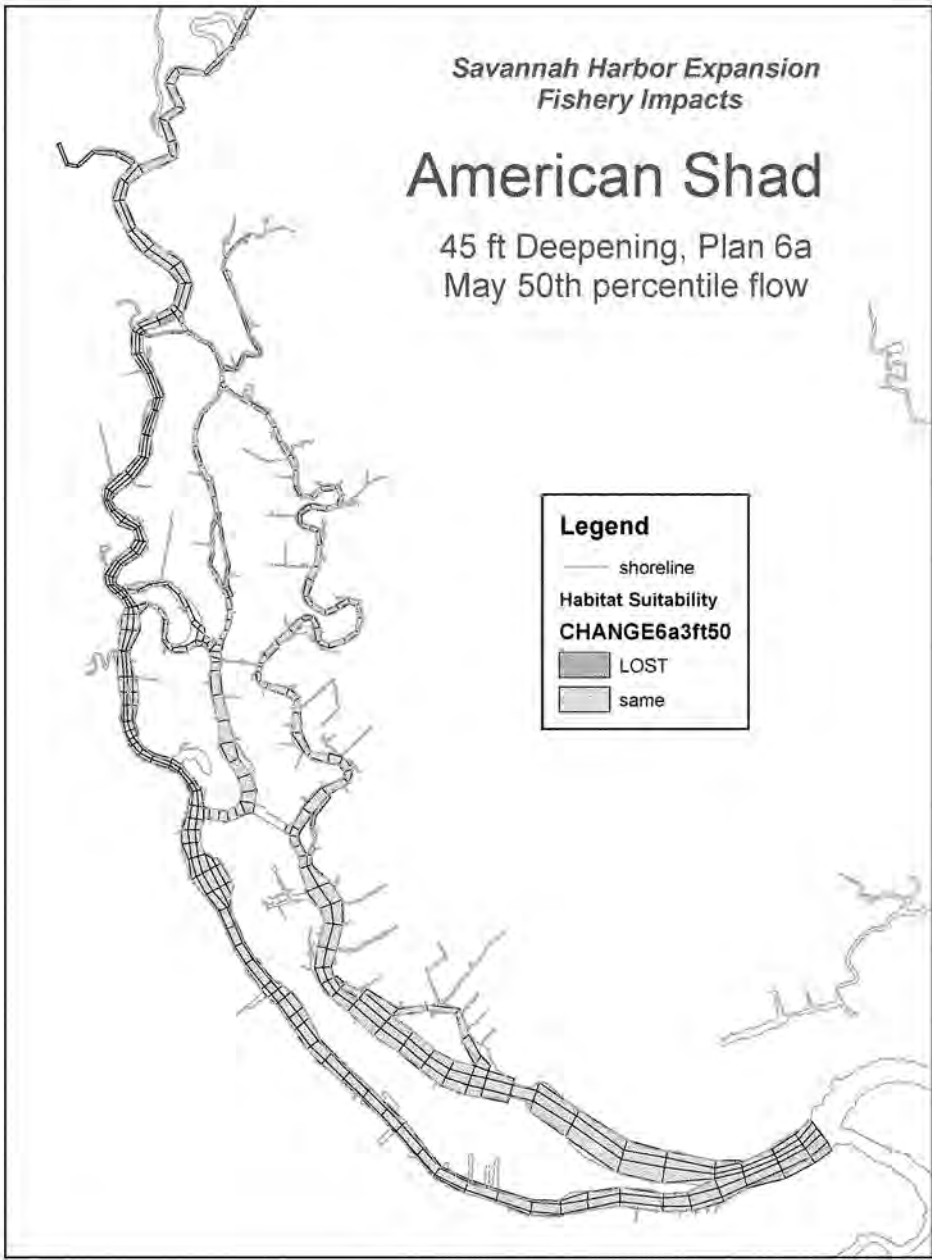
**Legend**

— shoreline

**Habitat Suitability**  
**CHANGE6a3ft50**

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

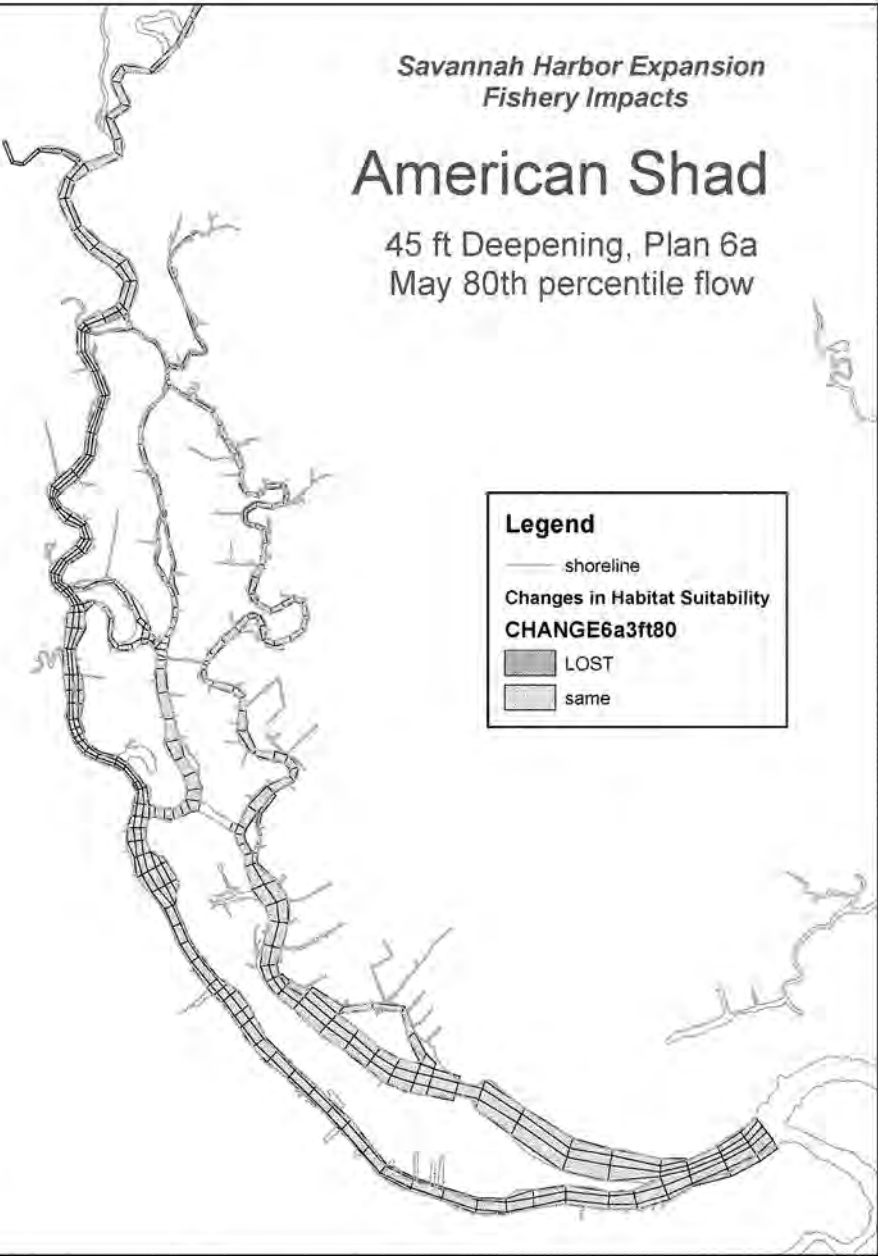
45 ft Deepening, Plan 6a  
May 80th percentile flow

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |





*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

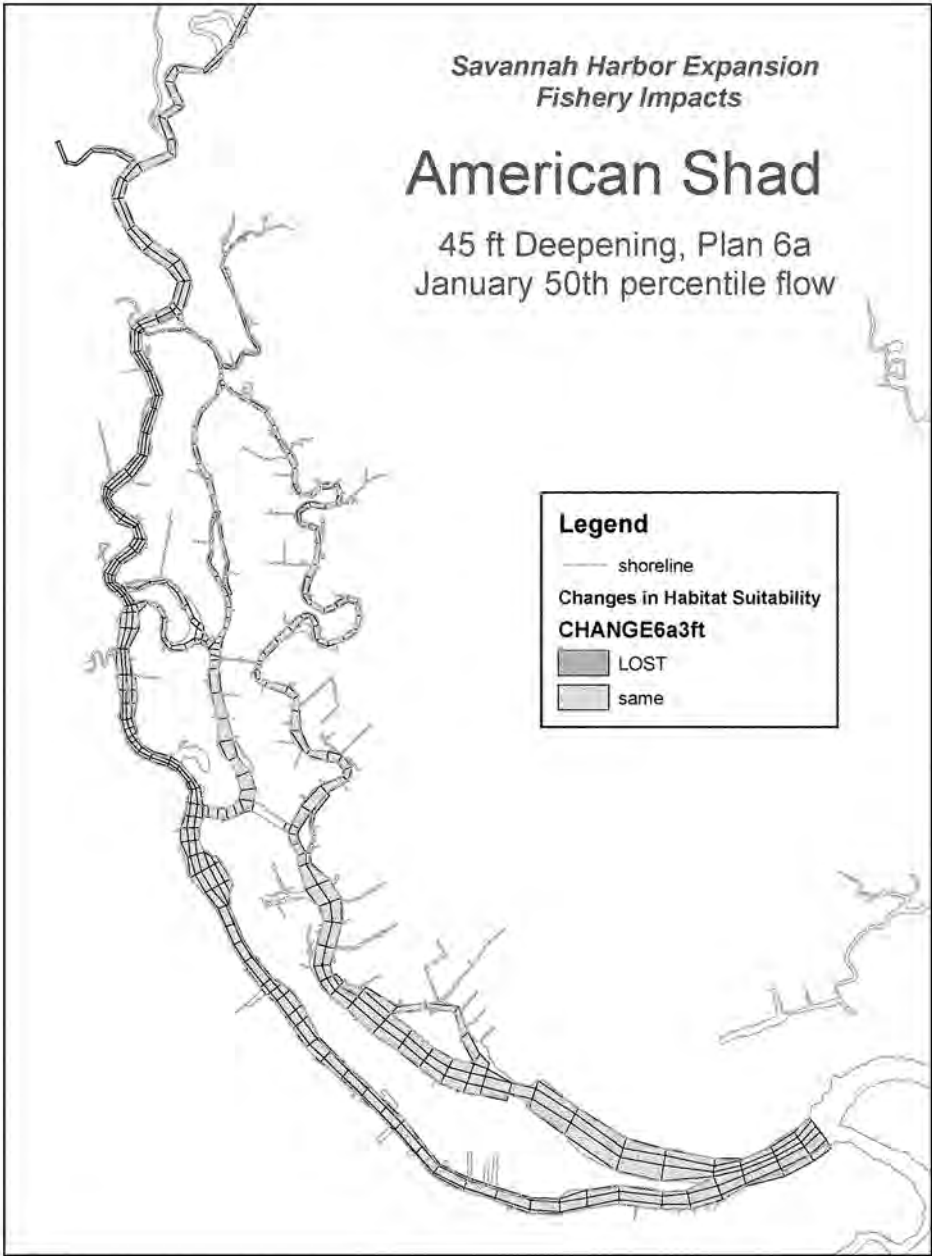
45 ft Deepening, Plan 6a  
January 50th percentile flow

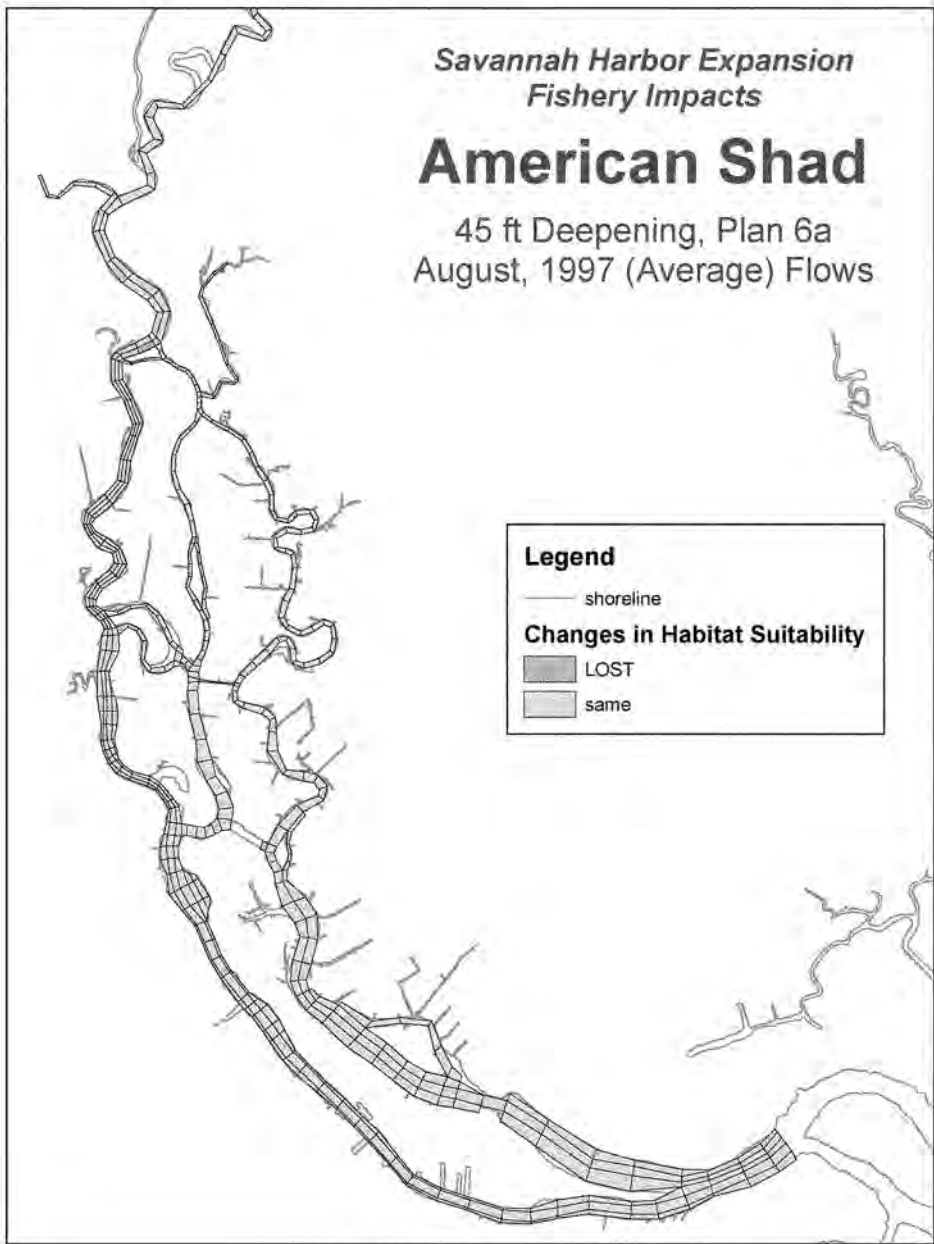
**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6a3ft**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

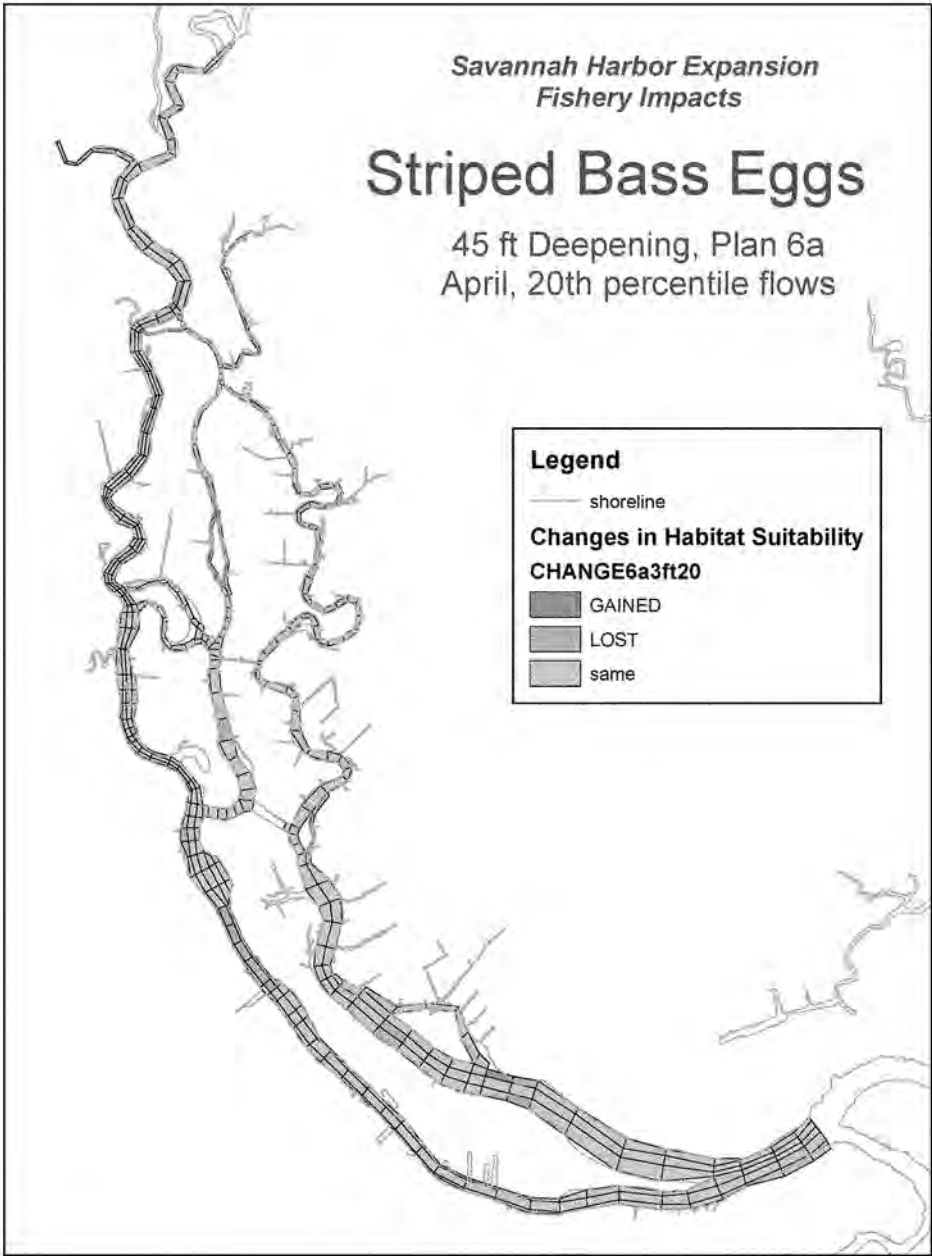
45 ft Deepening, Plan 6a  
April, 20th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft20**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

45 ft Deepening, Plan 6a  
April, 50th percentile flows

## Legend

— shoreline

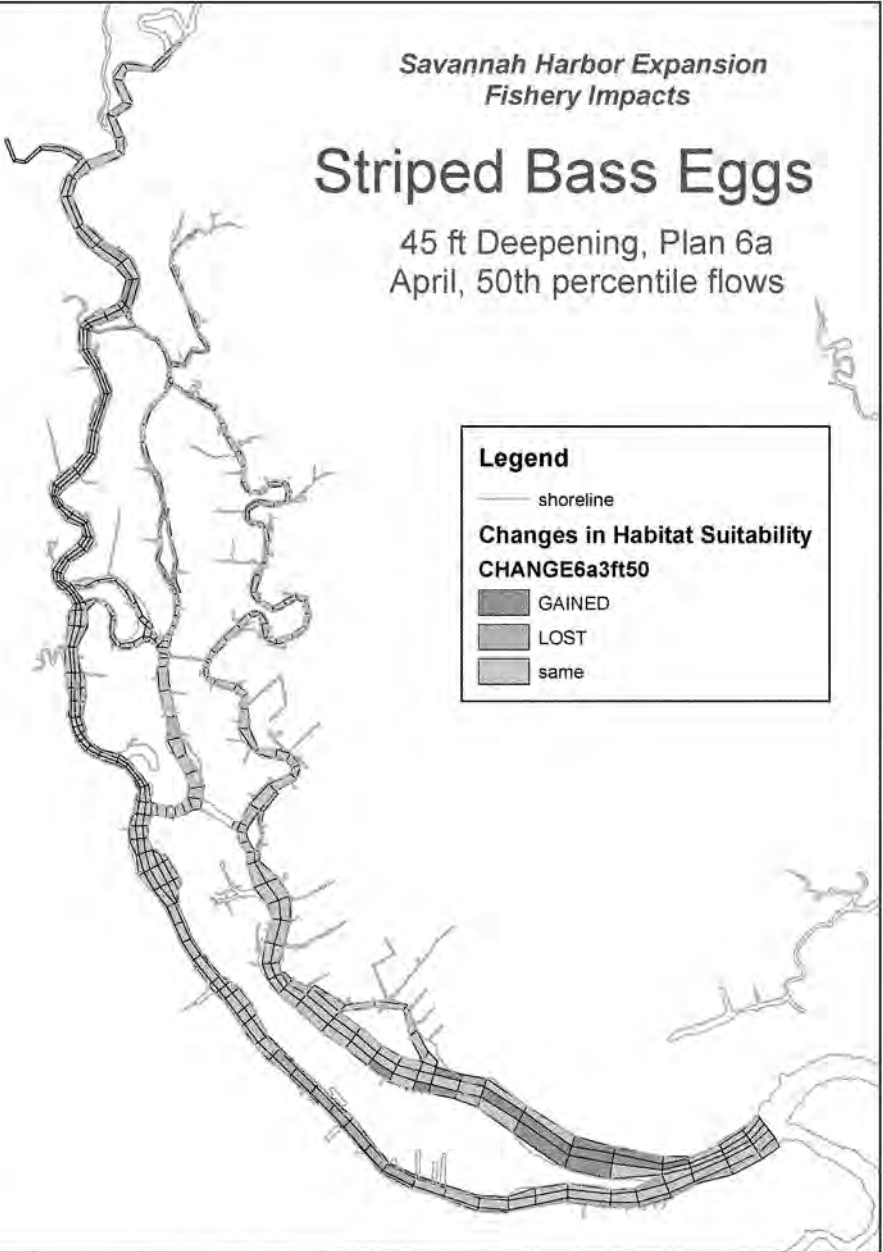
### Changes in Habitat Suitability

**CHANGE6a3ft50**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

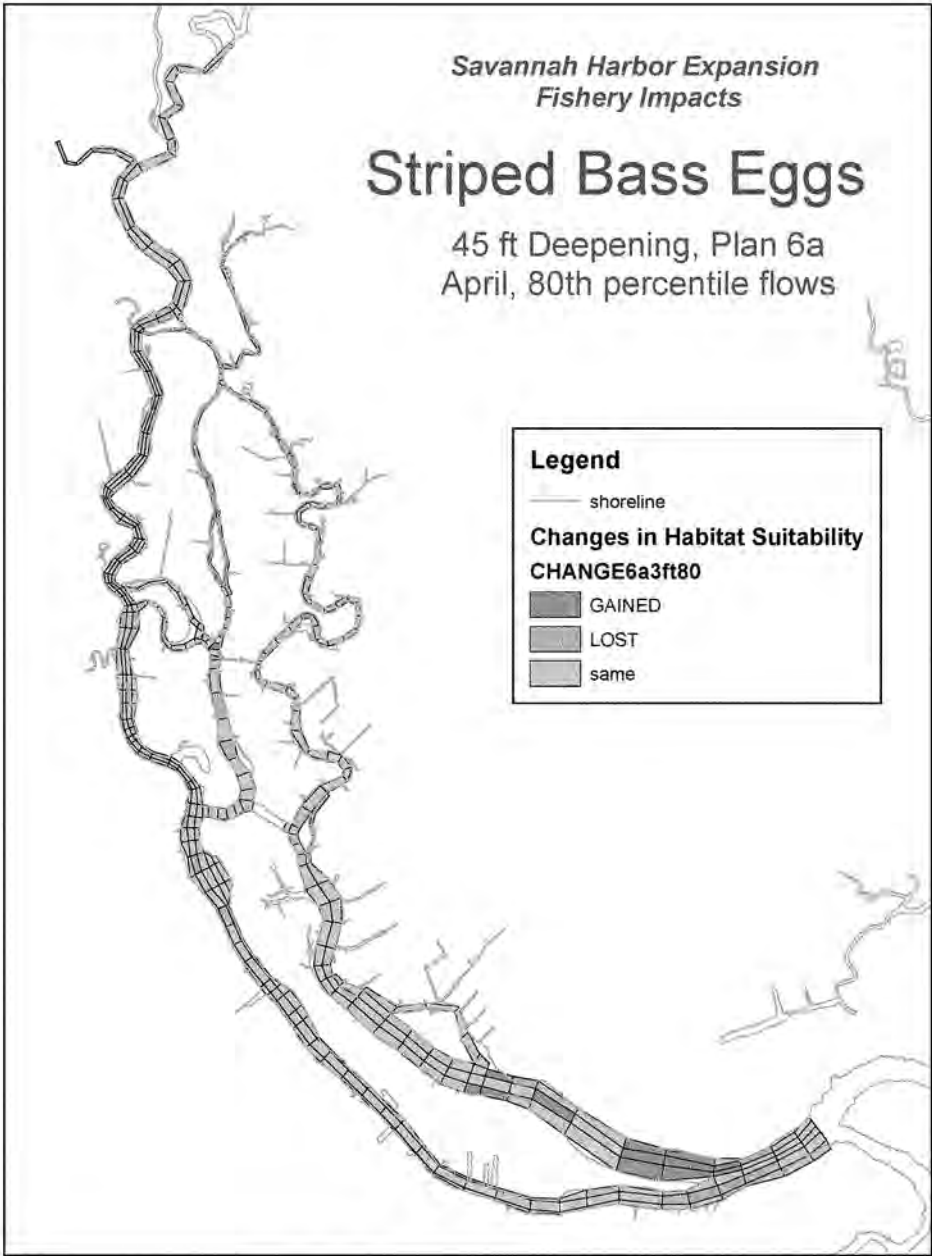
45 ft Deepening, Plan 6a  
April, 80th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft80**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

45 ft Deepening, Plan 6a  
May, 20th percentile flows

## Legend

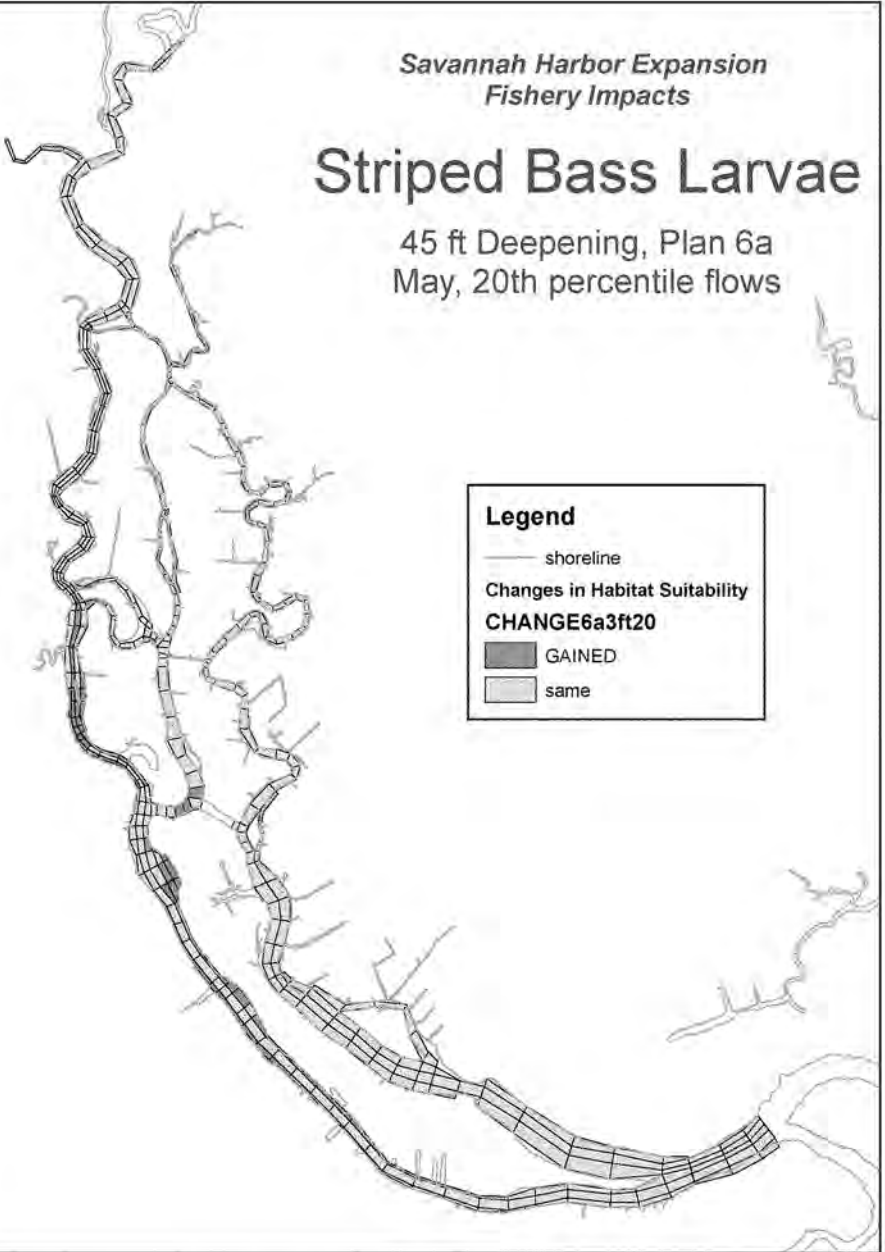
— shoreline

Changes in Habitat Suitability

**CHANGE6a3ft20**

■ GAINED

□ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

45 ft Deepening, Plan 6a  
May, 50th percentile flows

## Legend

— shoreline

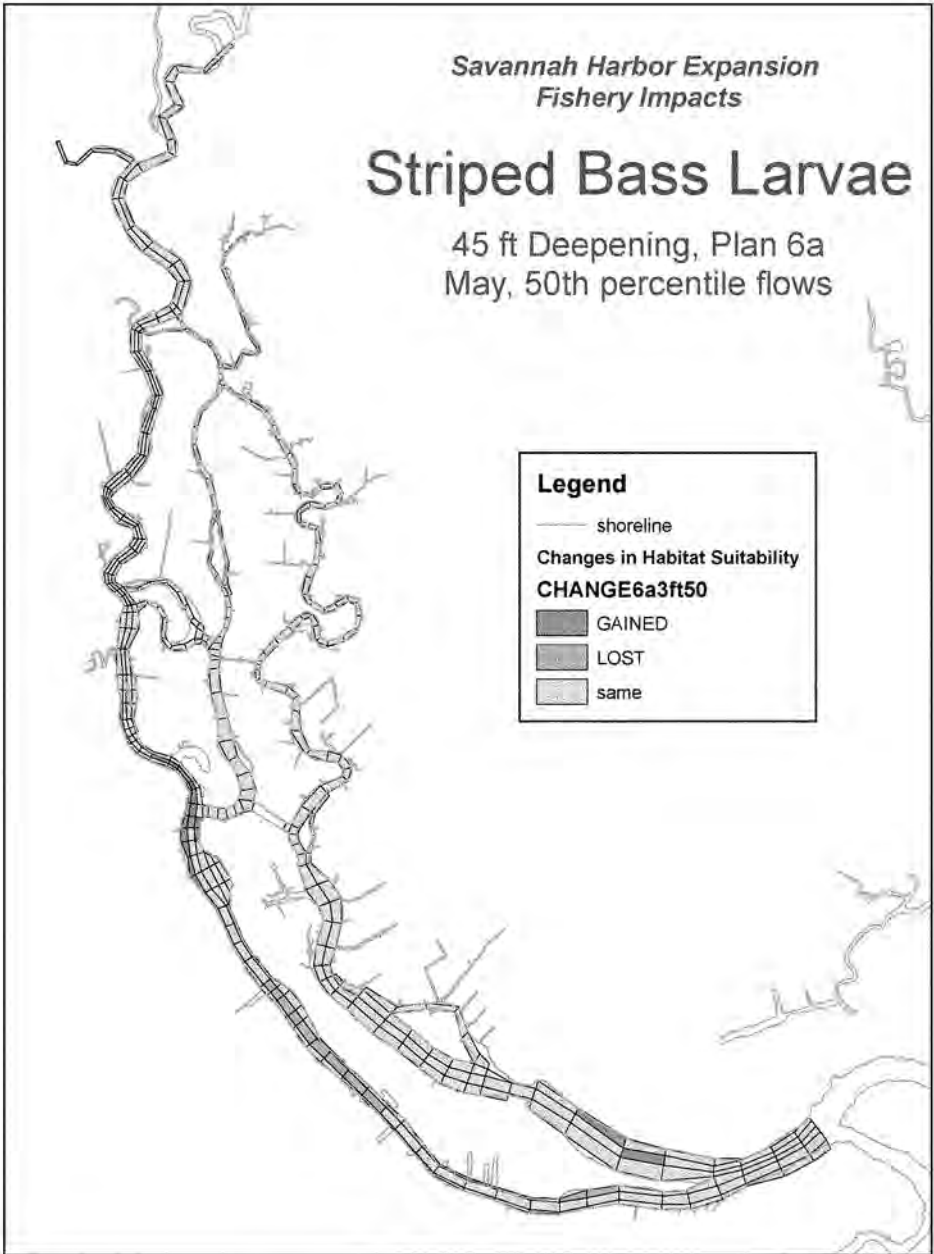
Changes in Habitat Suitability

**CHANGE6a3ft50**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

45 ft Deepening, Plan 6a  
May, 80th percentile flows

## Legend

— shoreline

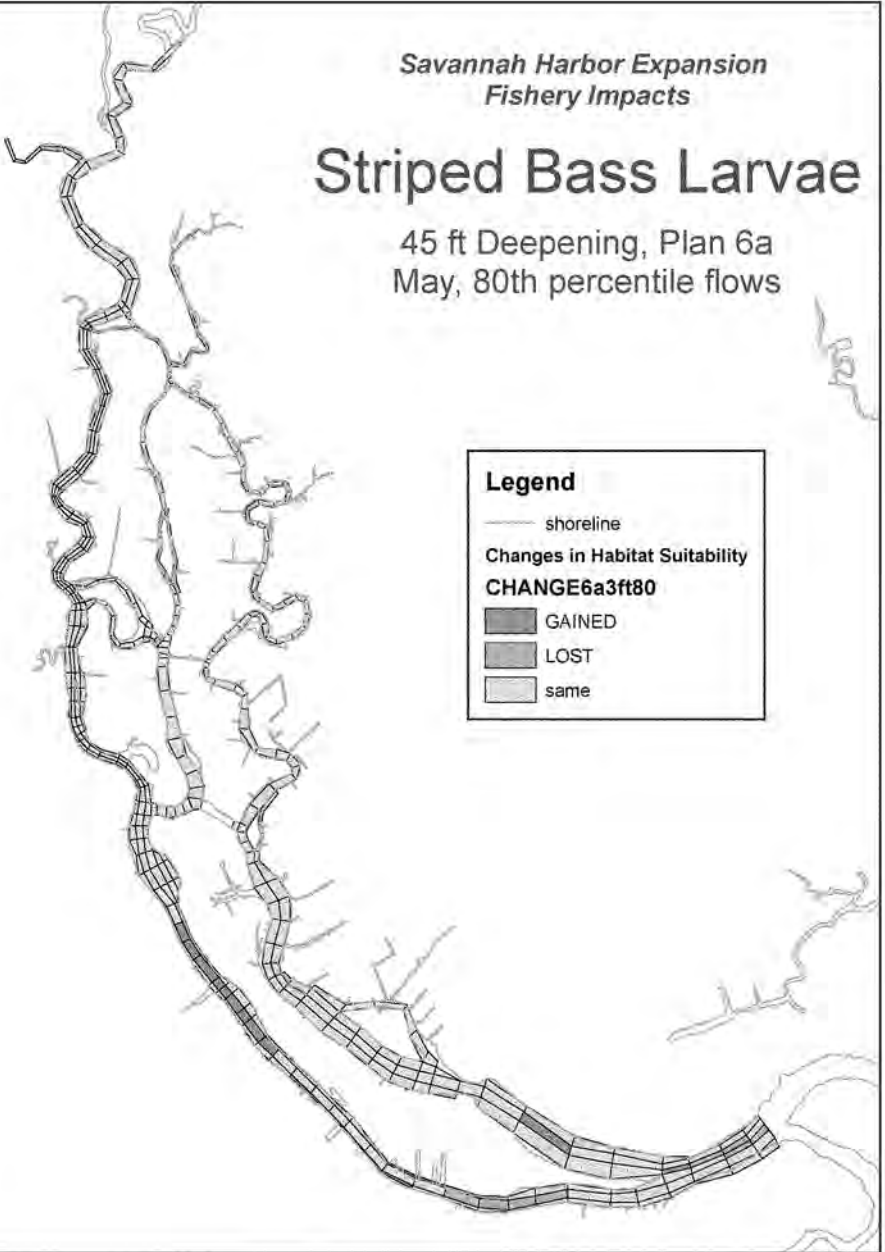
Changes in Habitat Suitability

**CHANGE6a3ft80**

■ GAINED

■ LOST

■ same





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

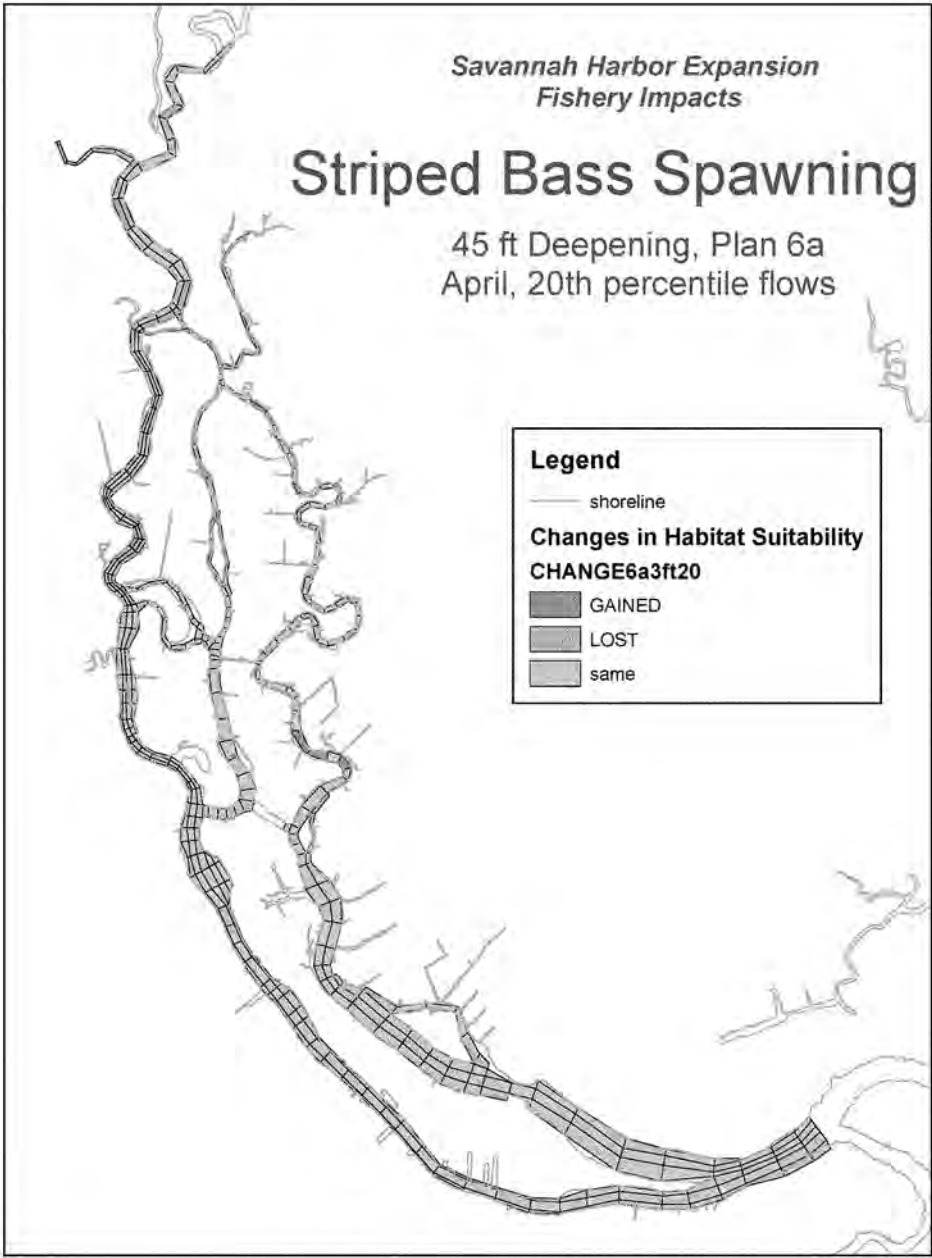
45 ft Deepening, Plan 6a  
April, 20th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft20**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

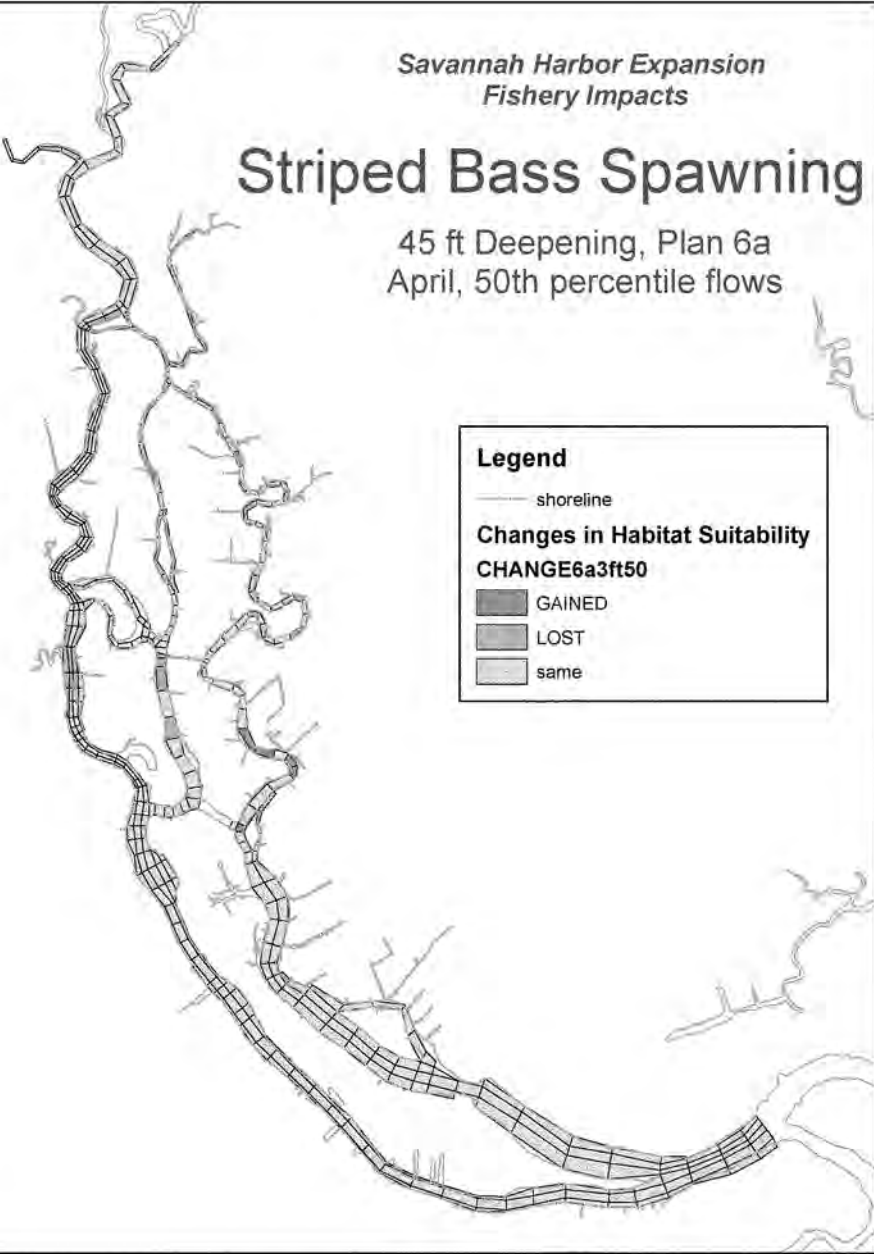
45 ft Deepening, Plan 6a  
April, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft50**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

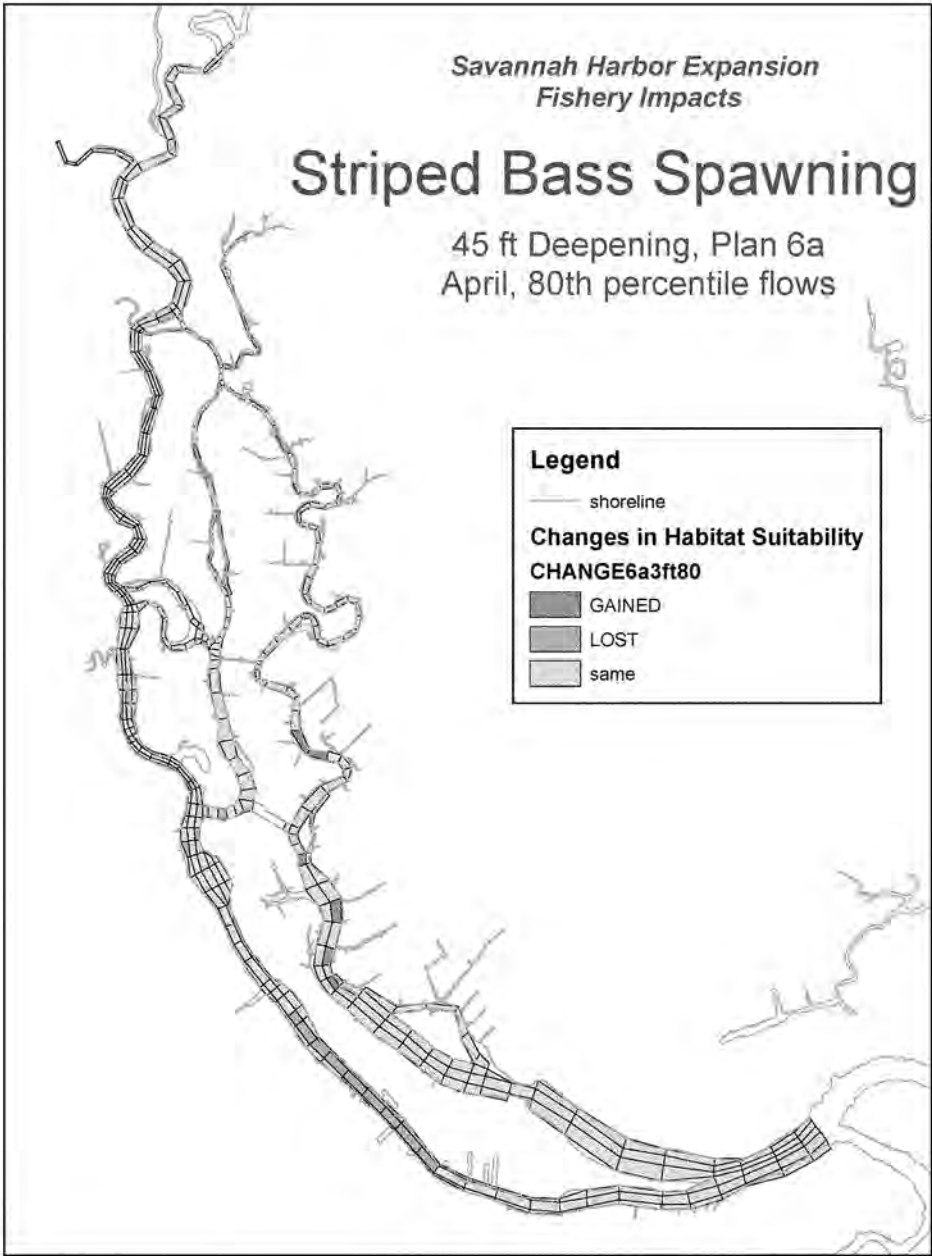
45 ft Deepening, Plan 6a  
April, 80th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft80**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Juveniles

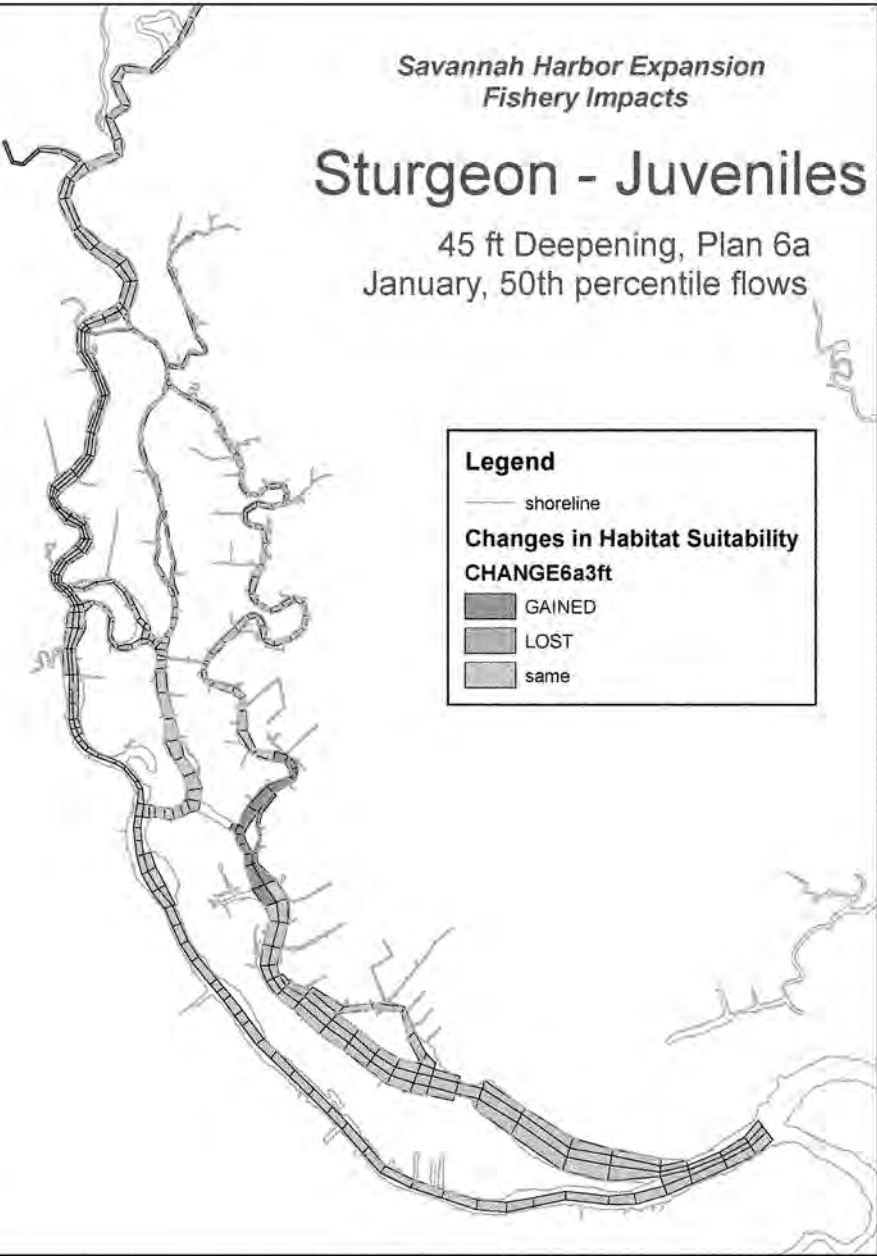
45 ft Deepening, Plan 6a  
January, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a3ft**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Adults

45 ft Deepening, Plan 6a  
January, 50th percentile flows

**Legend**

— shoreline

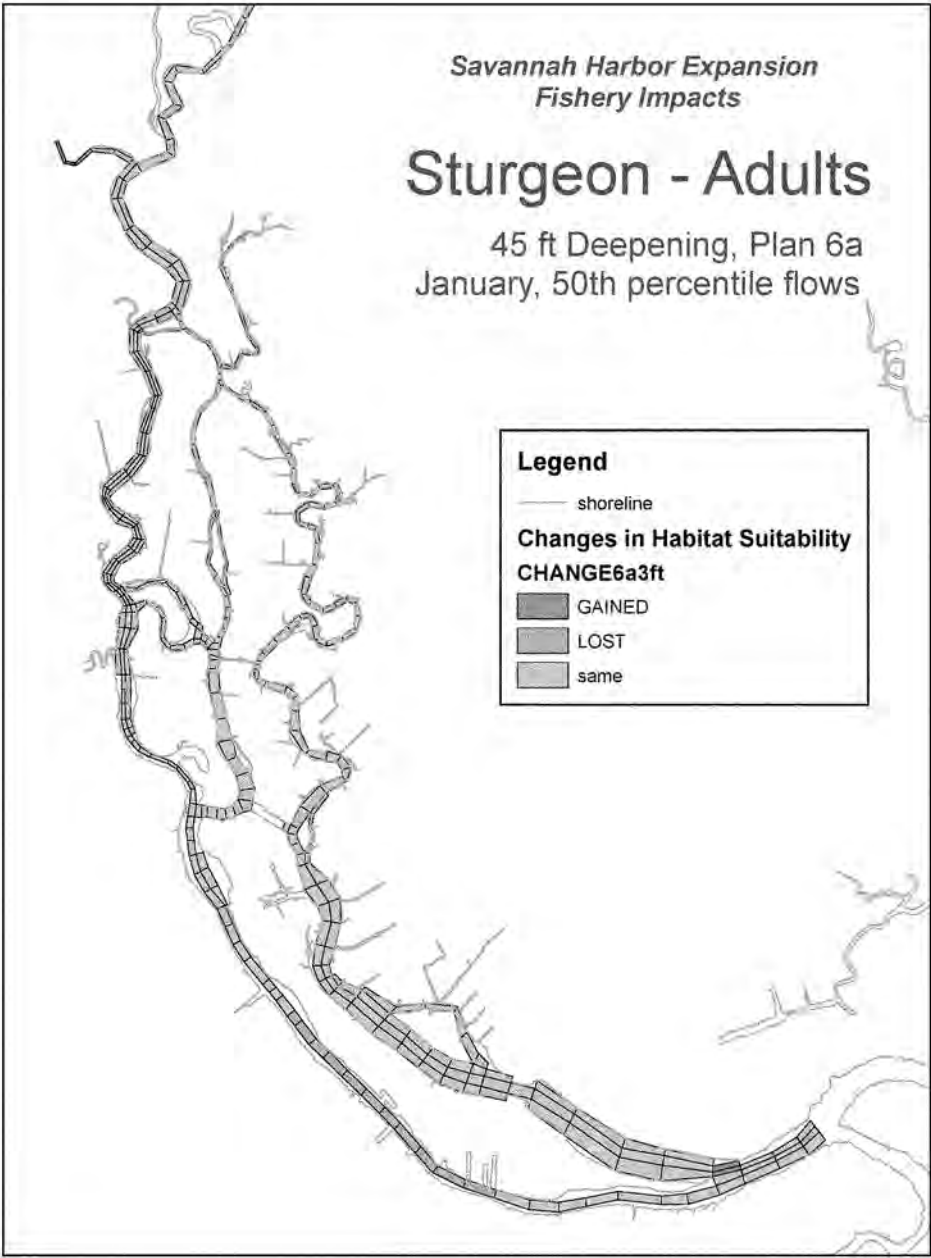
**Changes in Habitat Suitability**

**CHANGE6a3ft**

■ GAINED

■ LOST

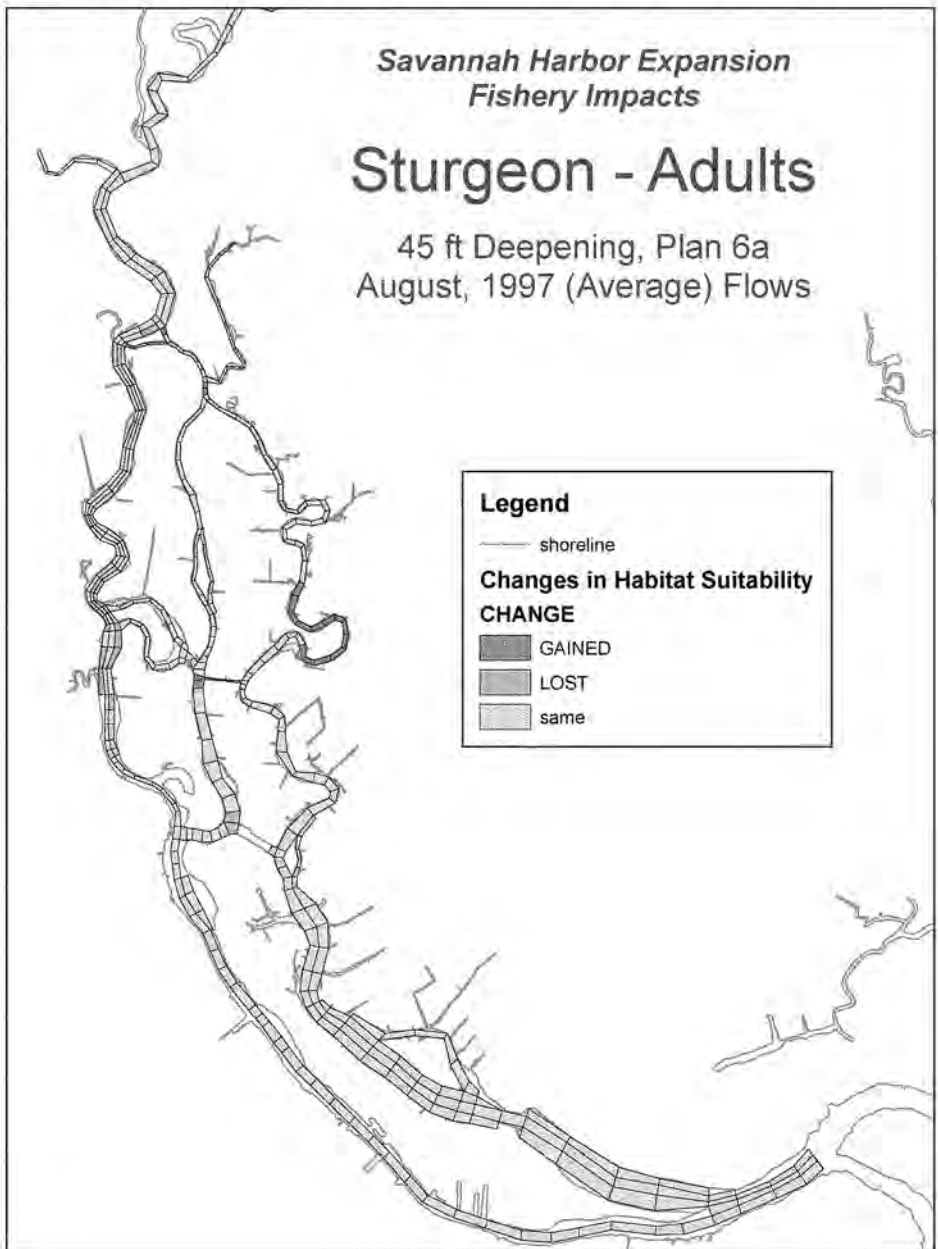
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

45 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

# Southern Flounder

45 ft Deepening, Plan 6a  
August, 1997 (Average) Flows

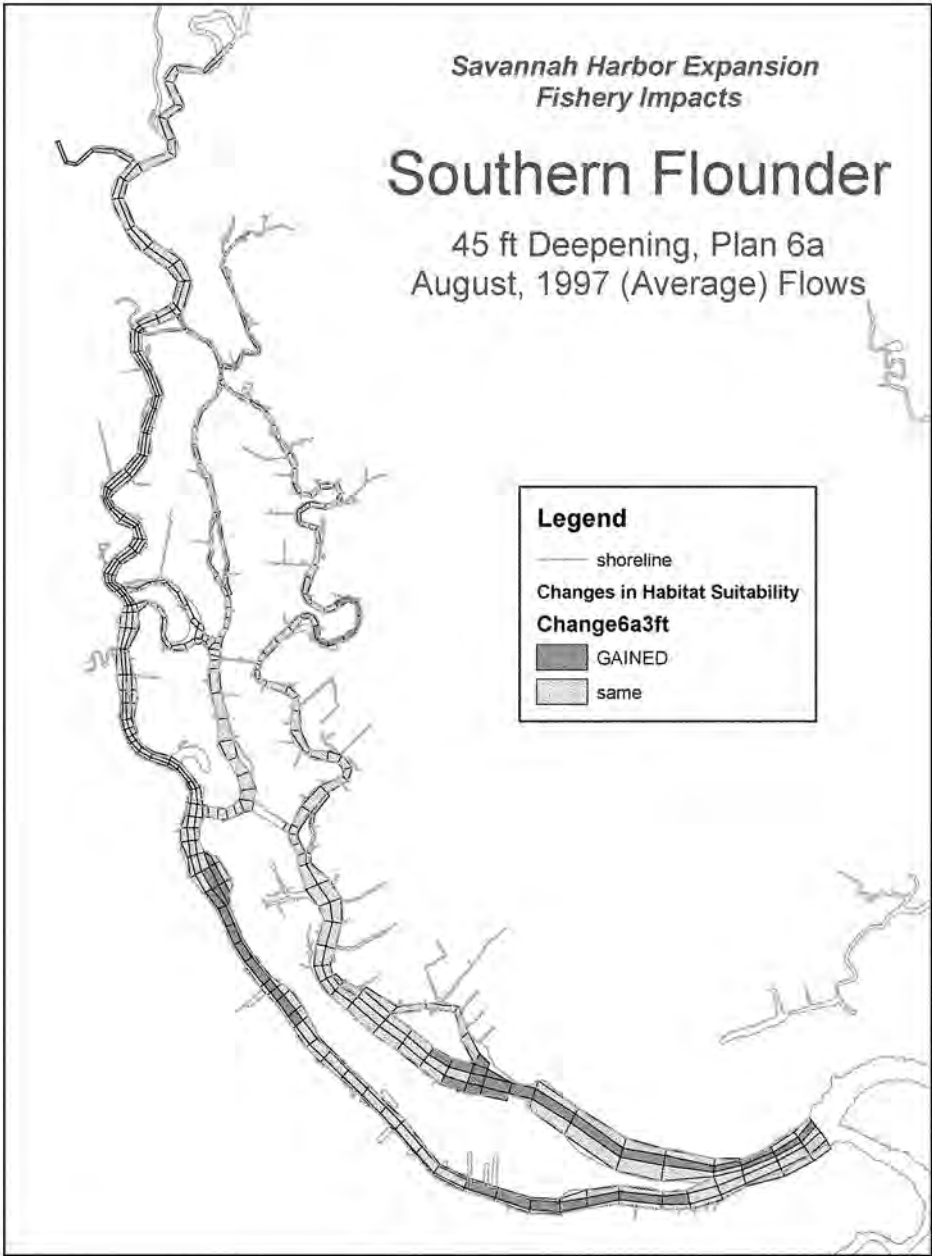
**Legend**

— shoreline

**Changes in Habitat Suitability**

**Change6a3ft**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | same   |



# **46 ft Channel Depth**

## *Mitigation Plan 6a*



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

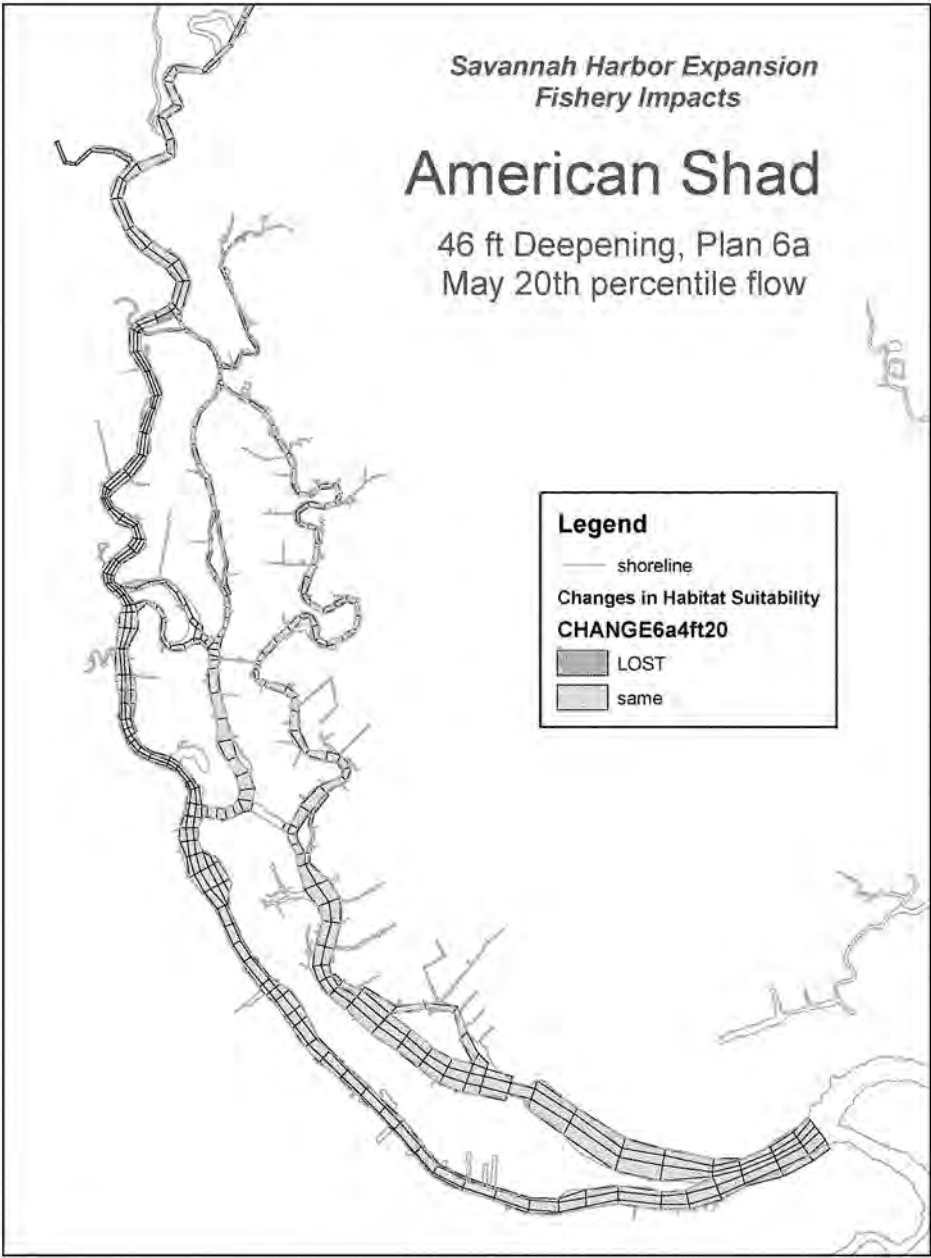
46 ft Deepening, Plan 6a  
May 20th percentile flow

**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6a4ft20**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

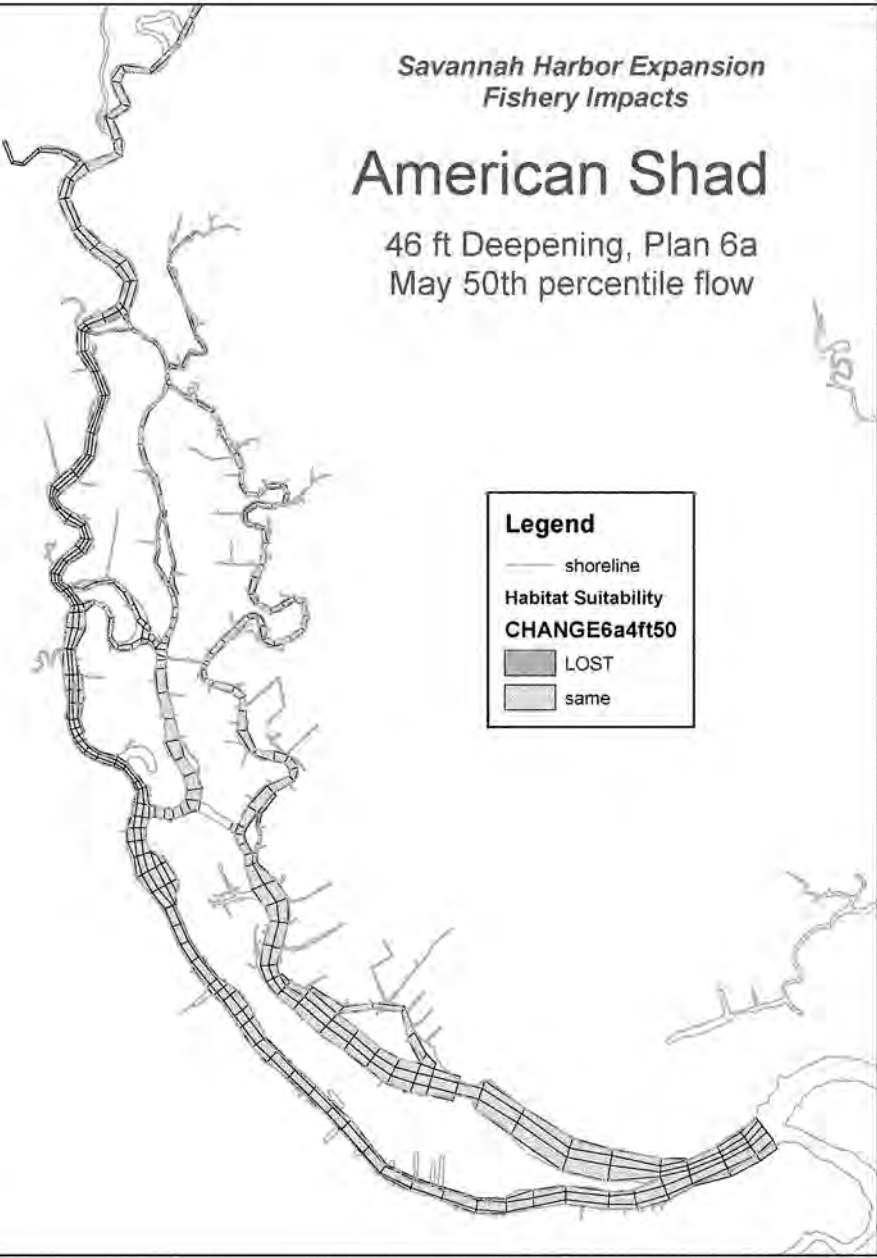
46 ft Deepening, Plan 6a  
May 50th percentile flow

**Legend**

— shoreline

**Habitat Suitability**  
**CHANGE6a4ft50**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

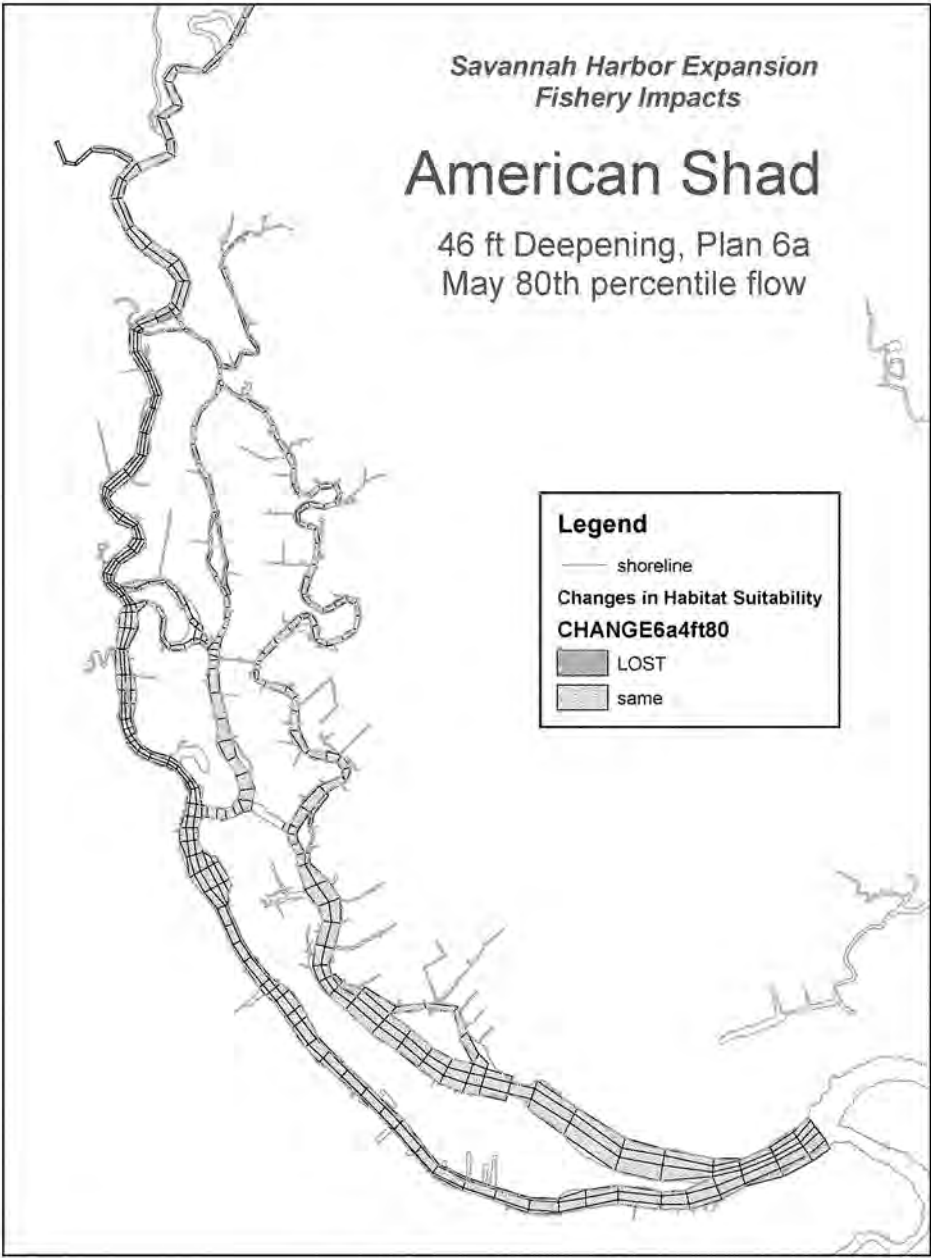
46 ft Deepening, Plan 6a  
May 80th percentile flow

**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6a4ft80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

46 ft Deepening, Plan 6a  
January 50th percentile flow

### Legend

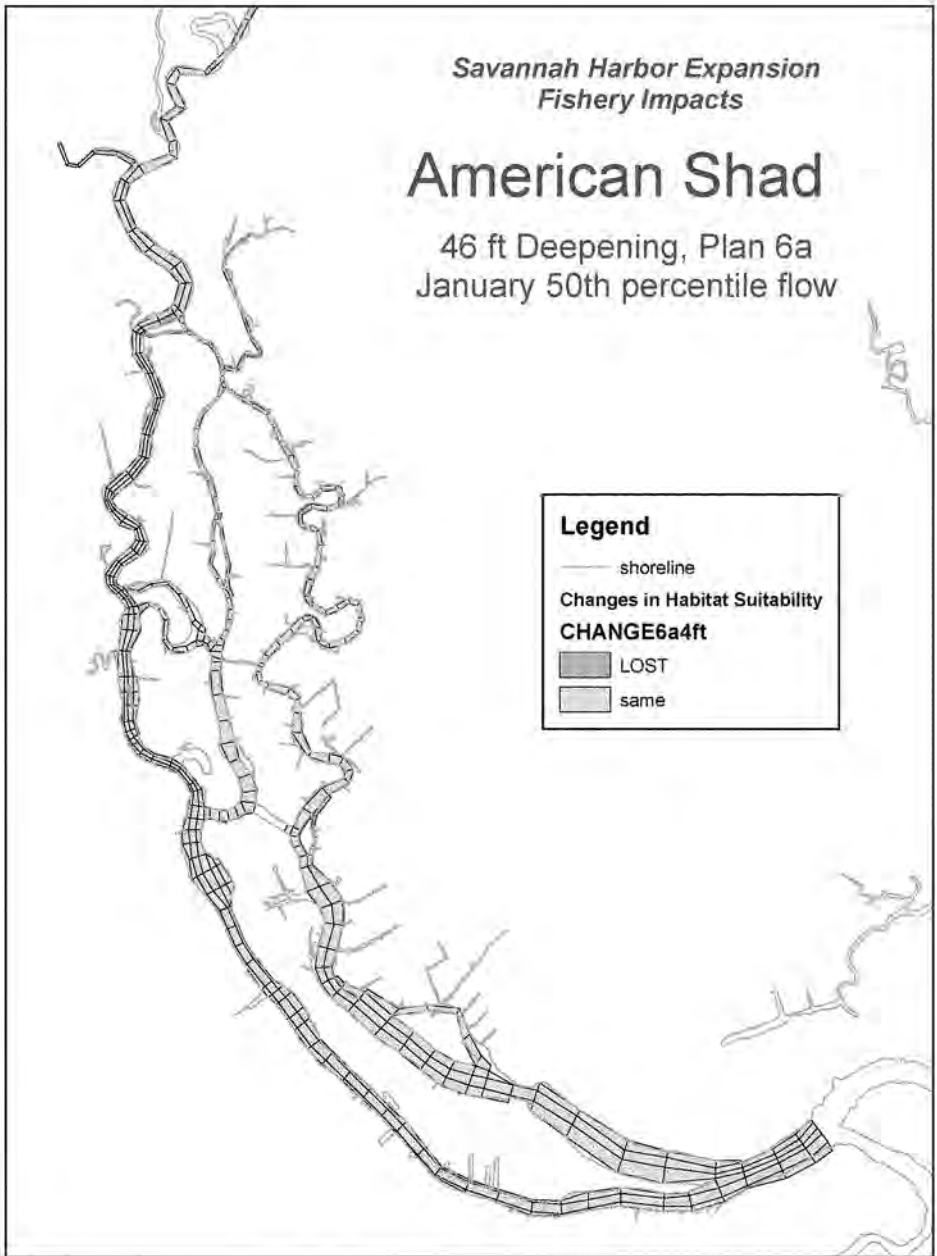
— shoreline

Changes in Habitat Suitability

**CHANGE6a4ft**

■ LOST

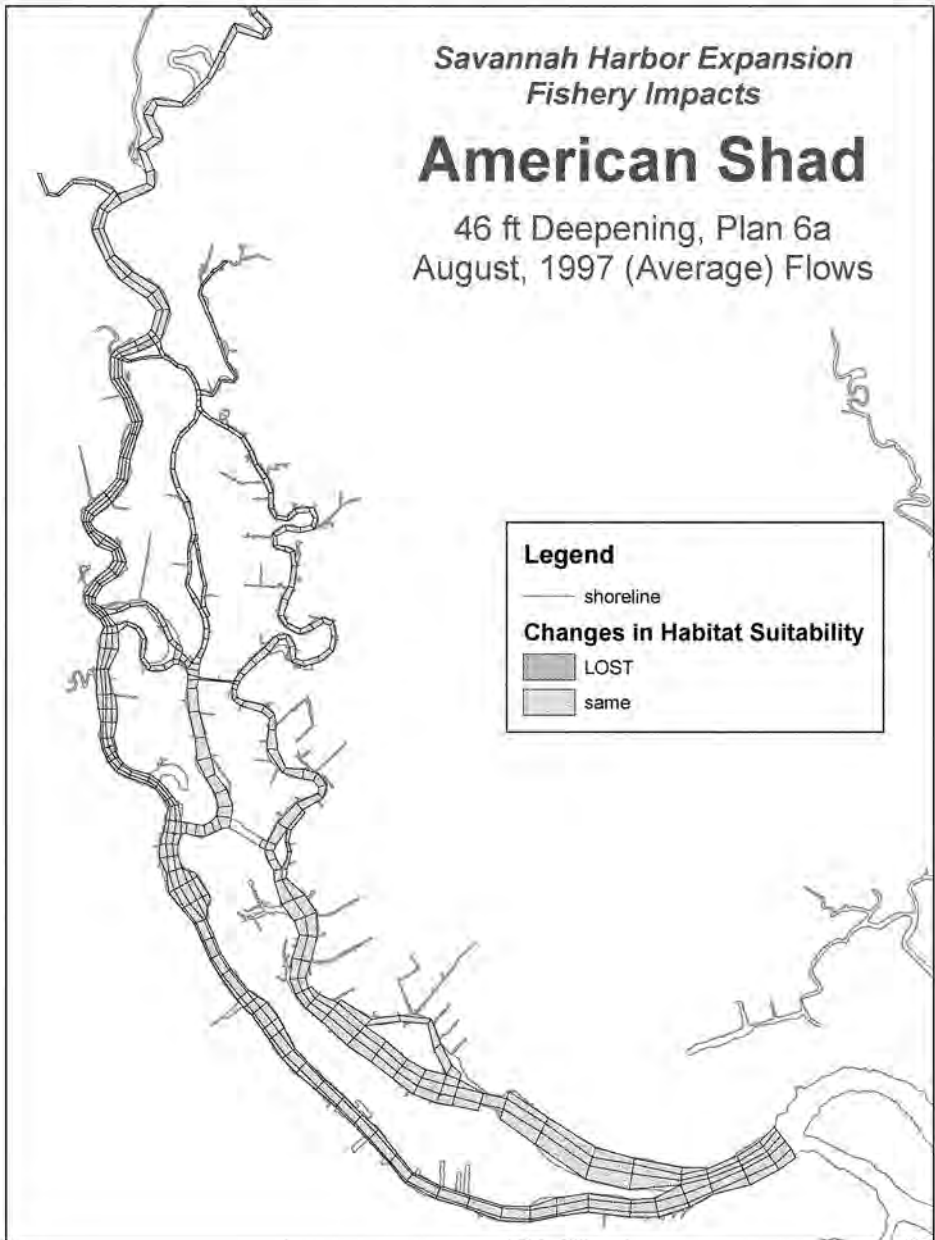
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

46 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Eggs

46 ft Deepening, Plan 6a  
April, 20th percentile flows

### Legend

— shoreline

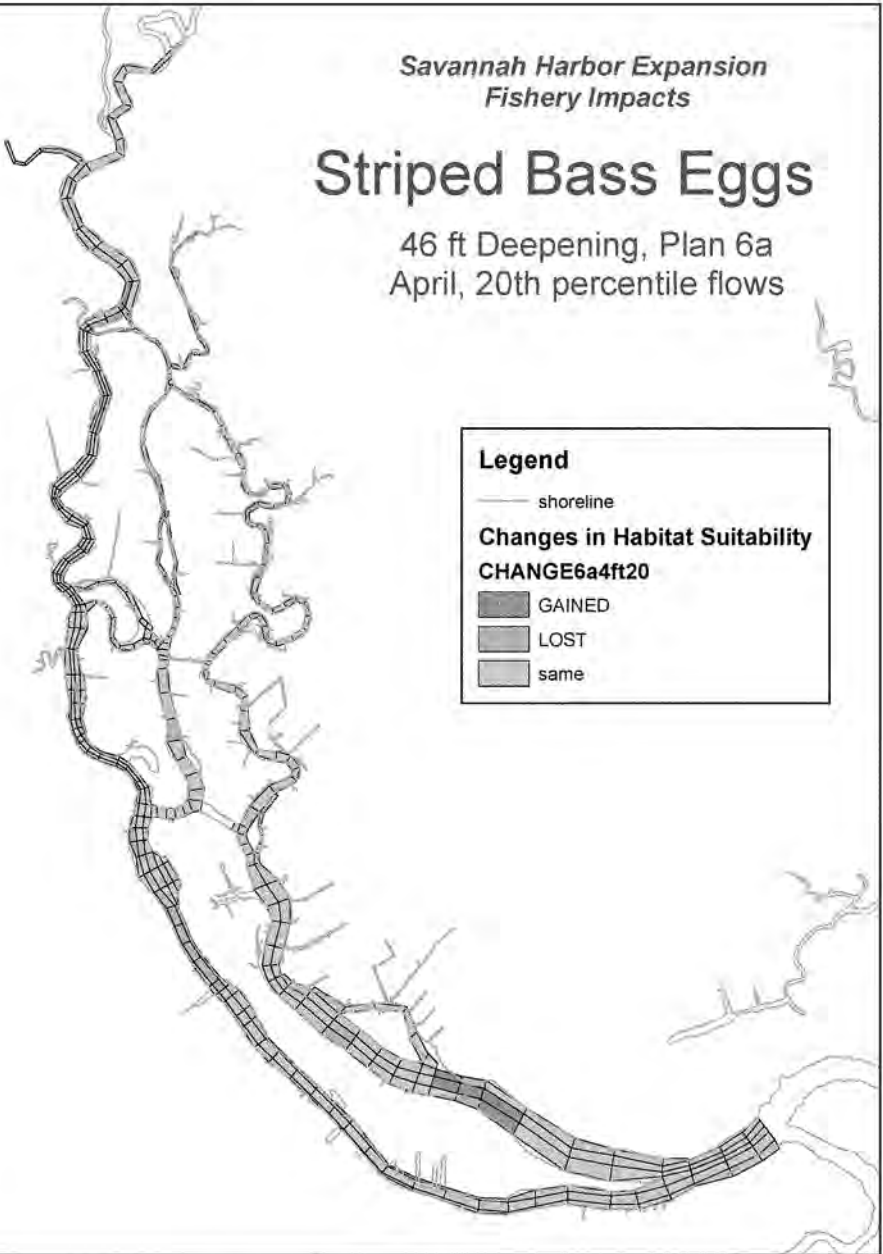
### Changes in Habitat Suitability

#### CHANGE6a4ft20

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

46 ft Deepening, Plan 6a  
April, 50th percentile flows

## Legend

— shoreline

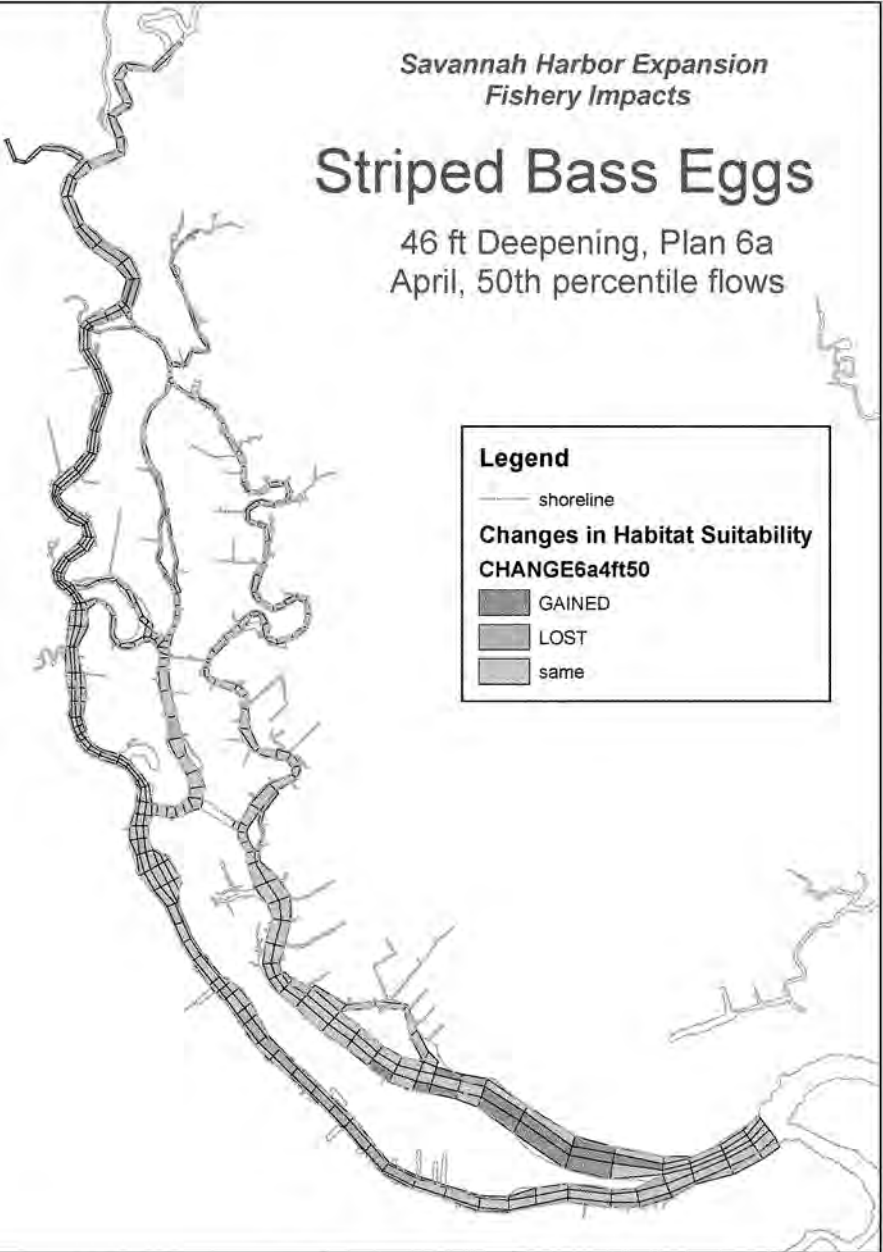
### Changes in Habitat Suitability

#### CHANGE6a4ft50

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

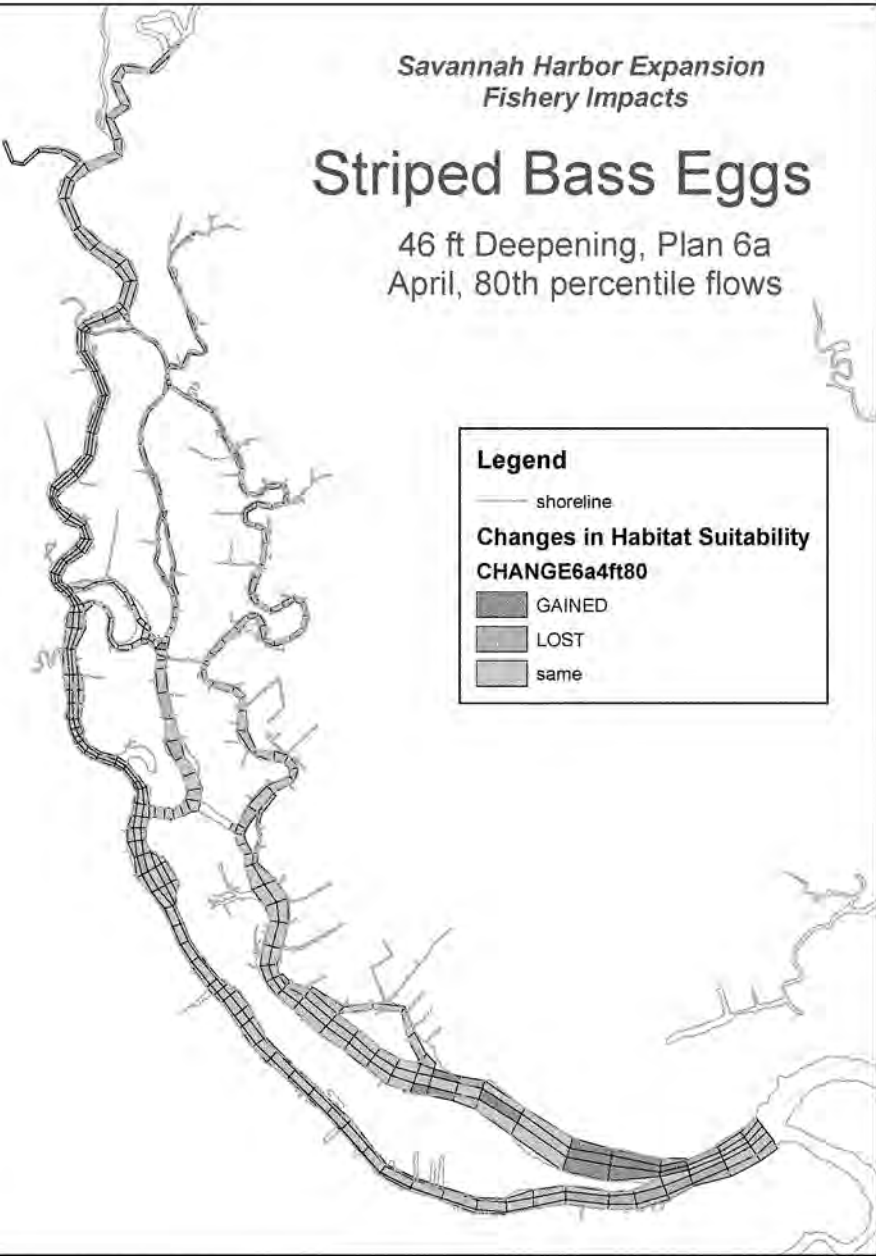
46 ft Deepening, Plan 6a  
April, 80th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a4ft80**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

46 ft Deepening, Plan 6a  
May, 20th percentile flows

## Legend

— shoreline

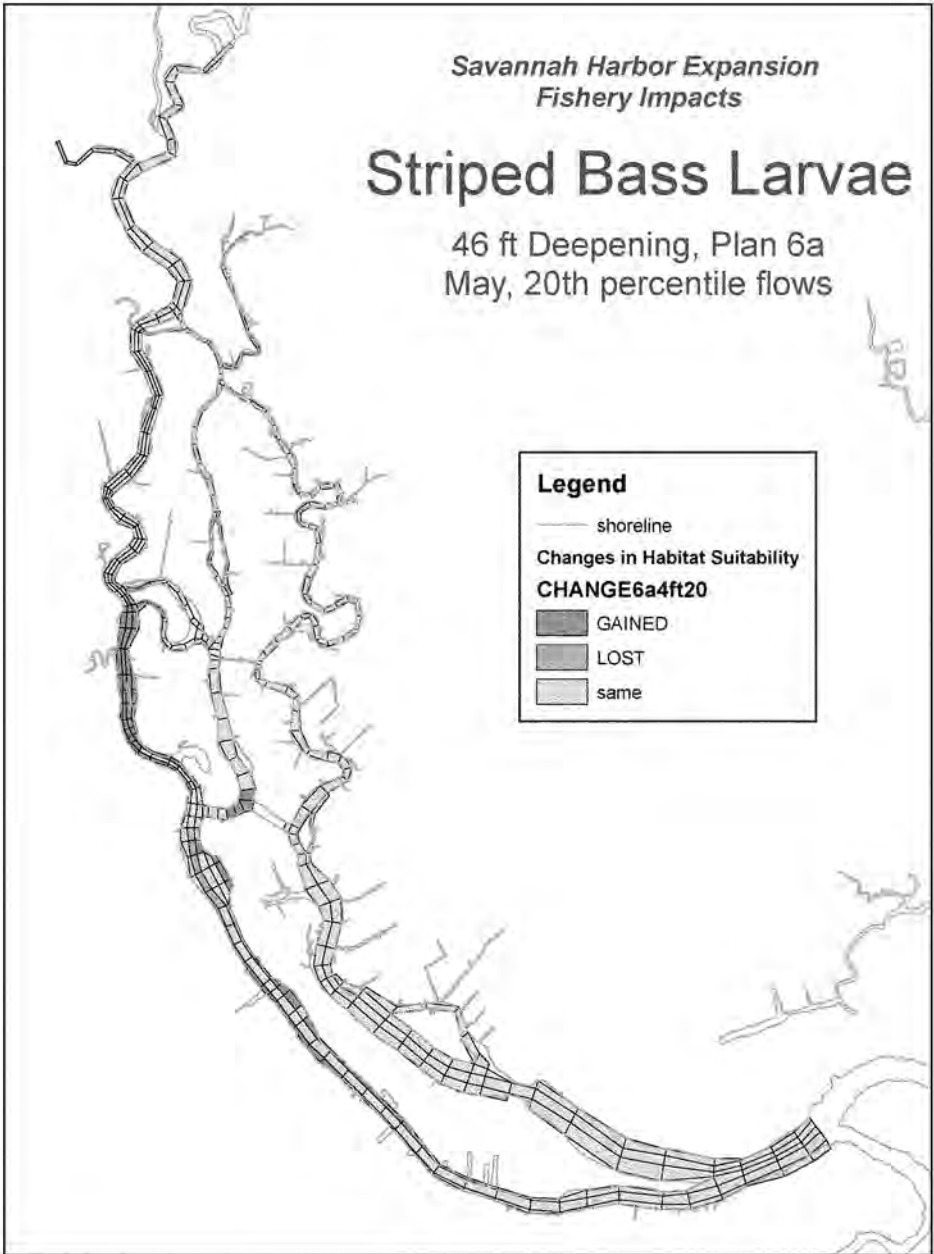
Changes in Habitat Suitability

**CHANGE6a4ft20**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

46 ft Deepening, Plan 6a  
May, 50th percentile flows

## Legend

— shoreline

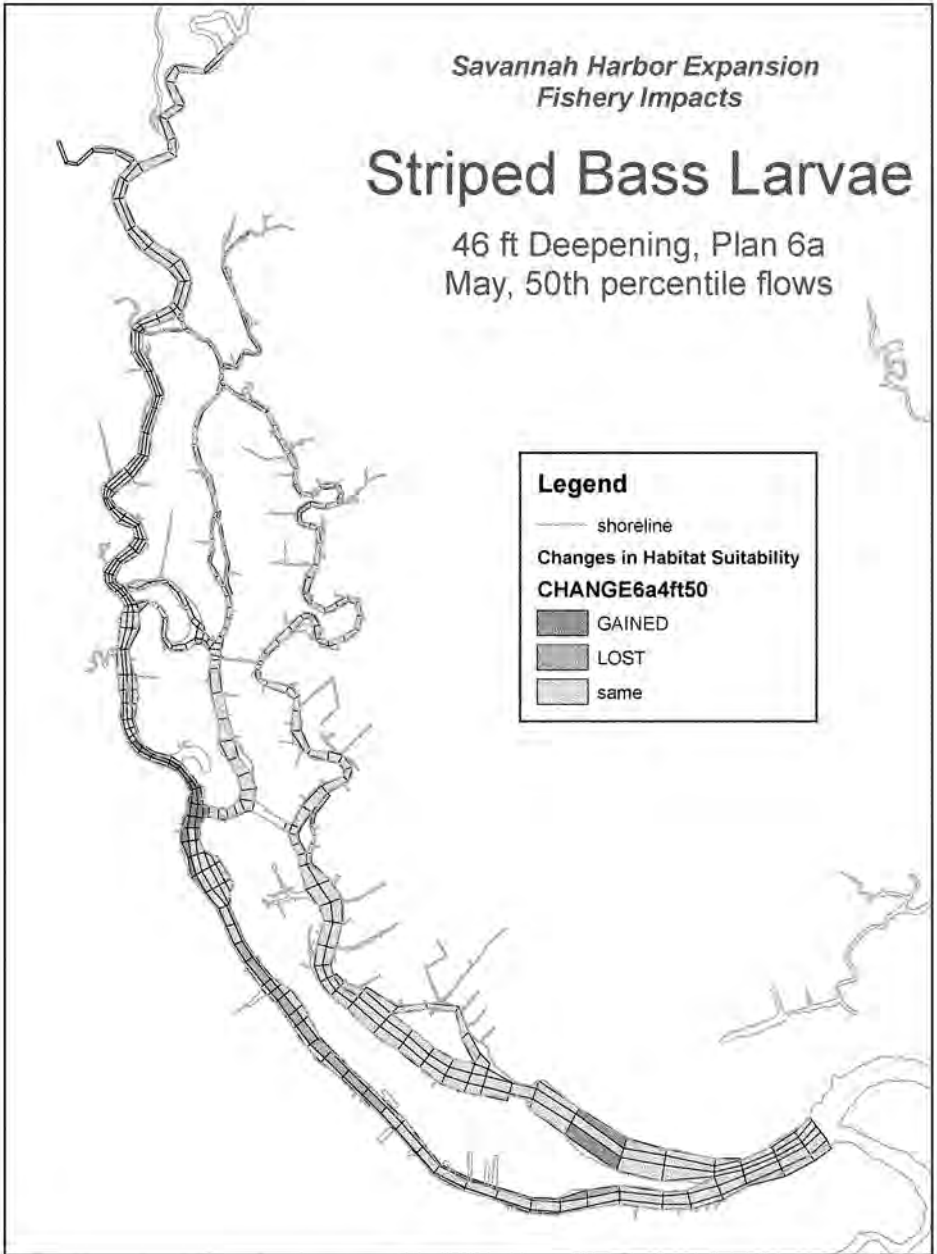
Changes in Habitat Suitability

**CHANGE6a4ft50**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

46 ft Deepening, Plan 6a  
May, 80th percentile flows

## Legend

— shoreline

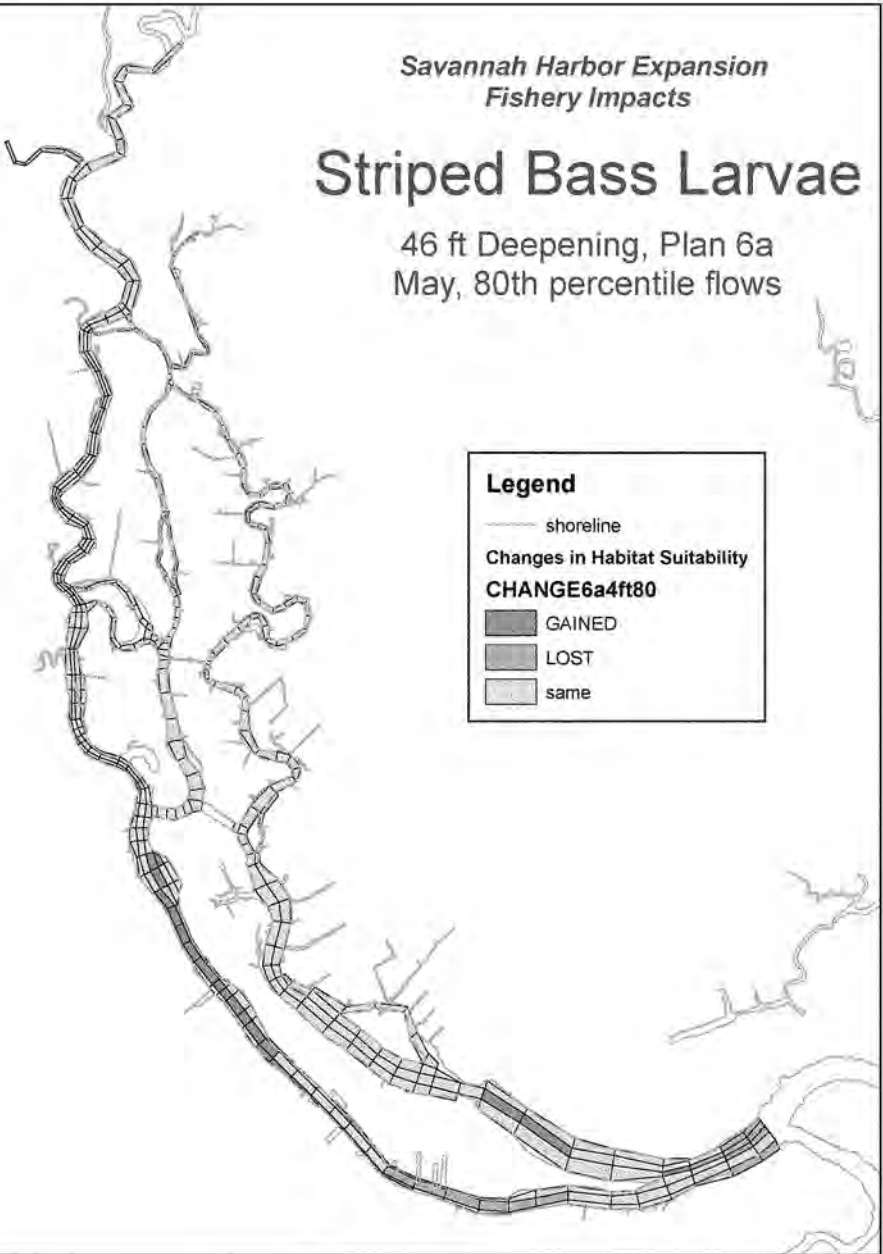
Changes in Habitat Suitability

**CHANGE6a4ft80**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

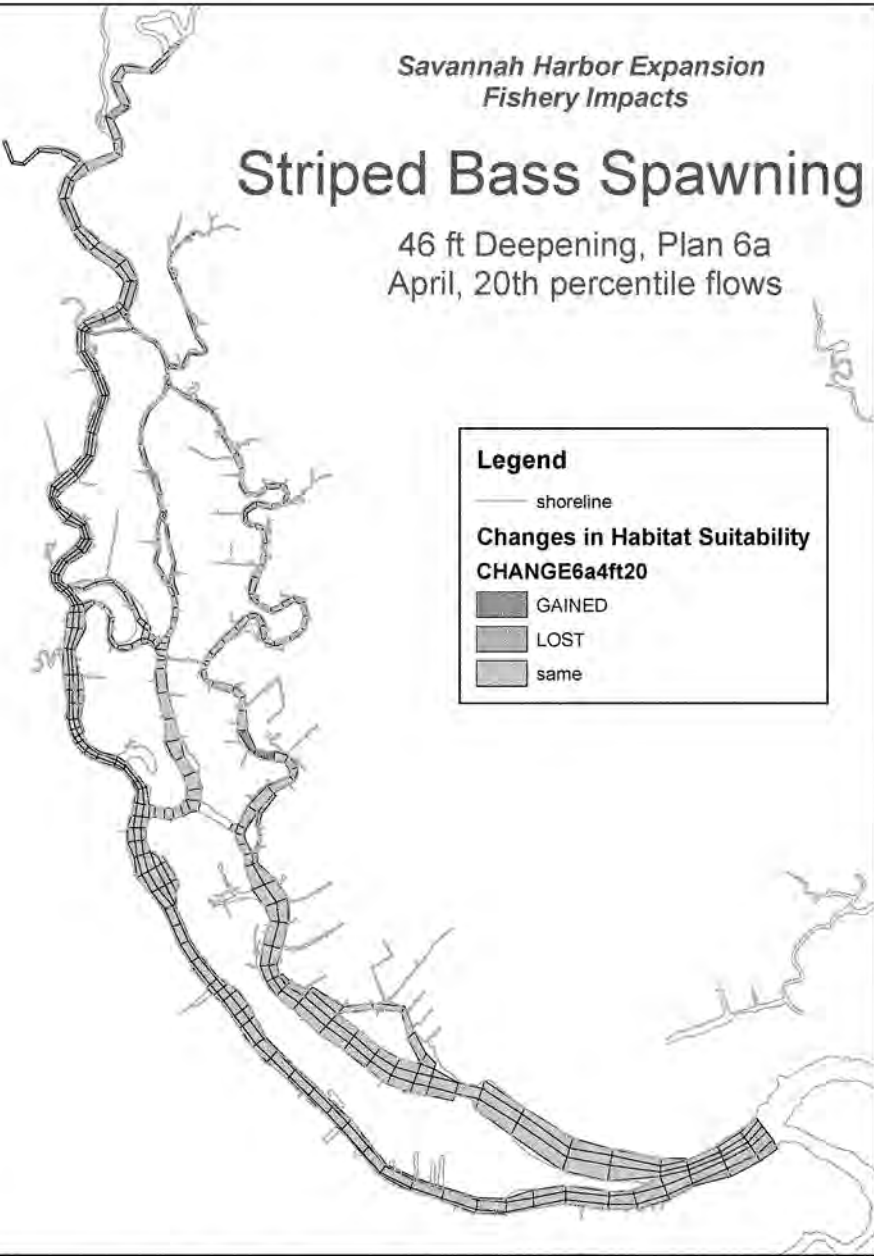
46 ft Deepening, Plan 6a  
April, 20th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a4ft20**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

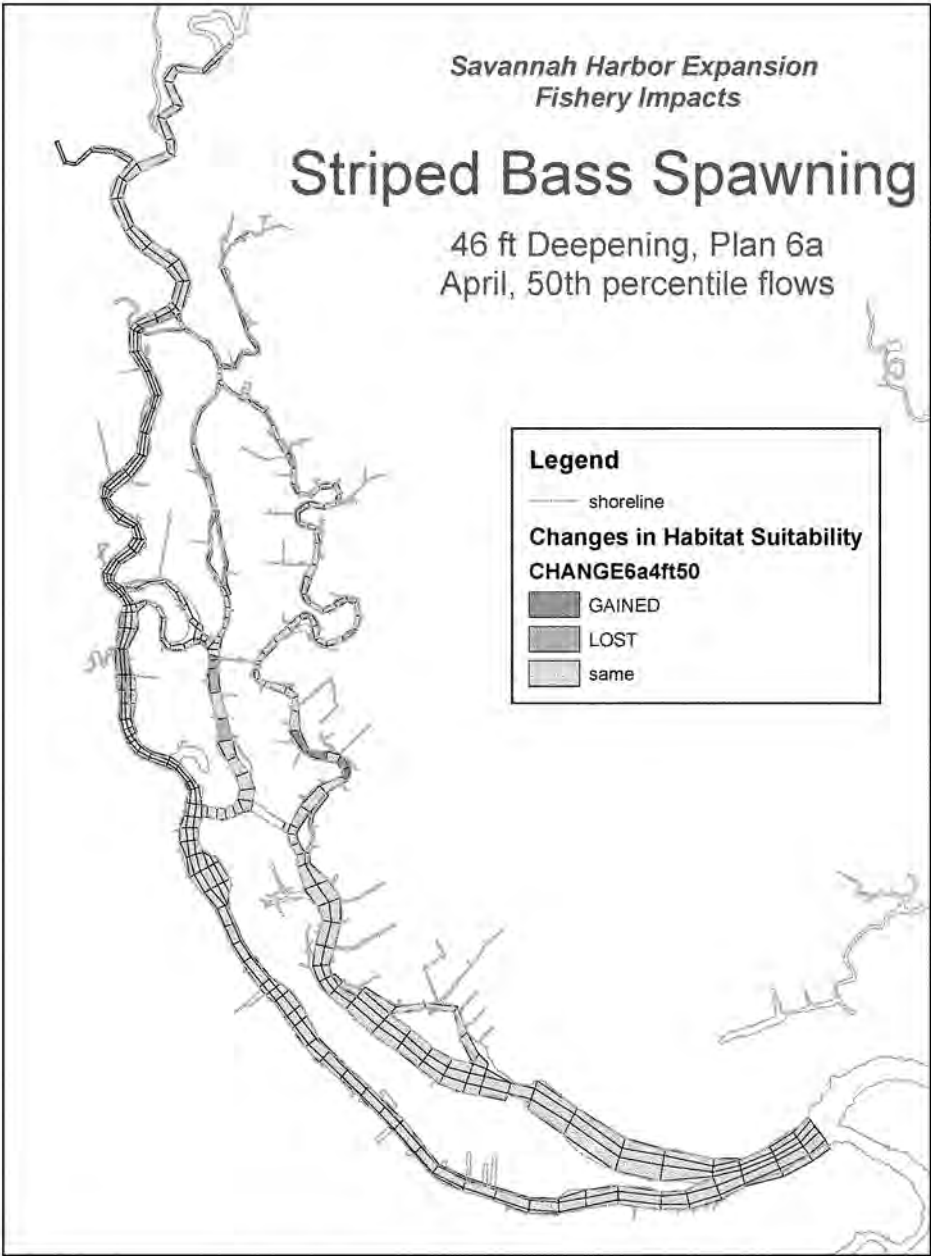
46 ft Deepening, Plan 6a  
April, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a4ft50**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

46 ft Deepening, Plan 6a  
April, 80th percentile flows

## Legend

— shoreline

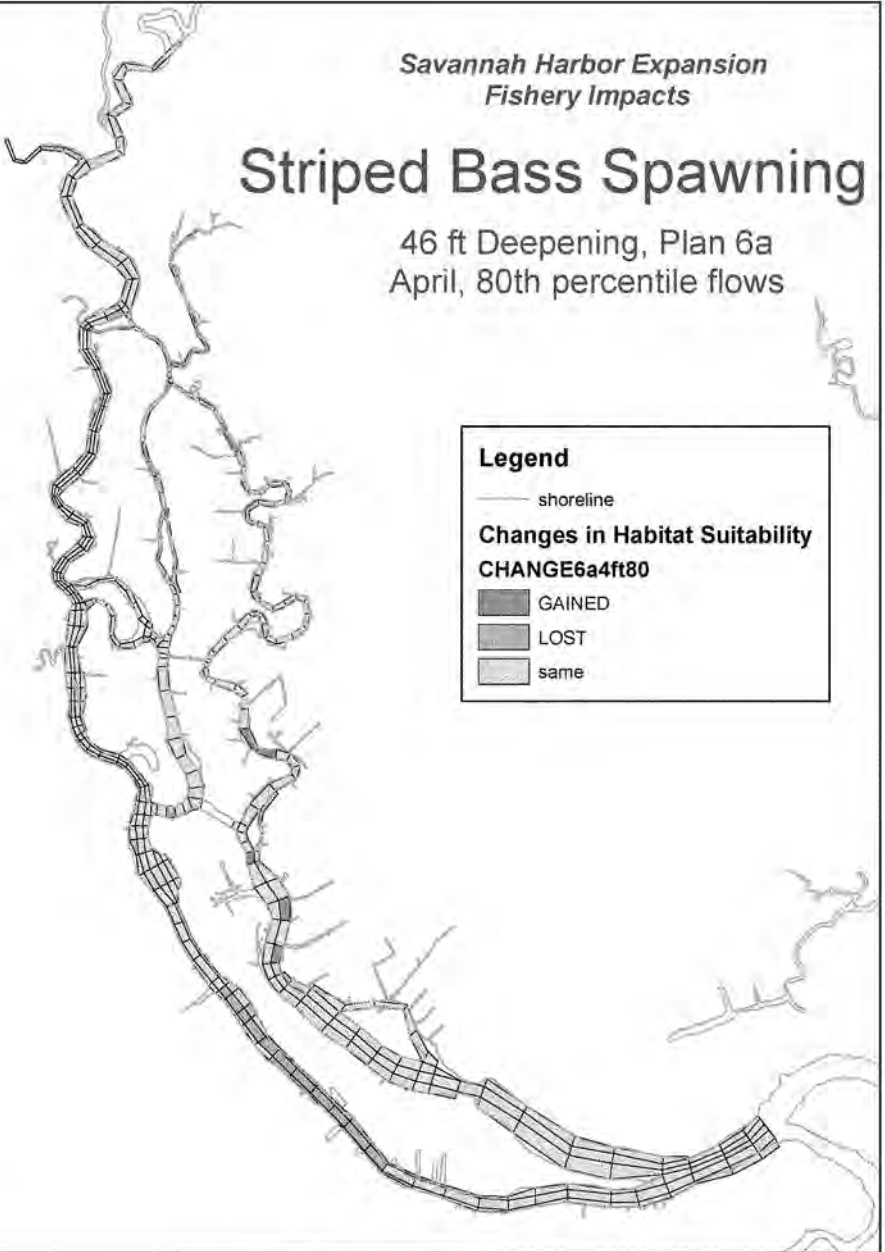
### Changes in Habitat Suitability

**CHANGE6a4ft80**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Juveniles

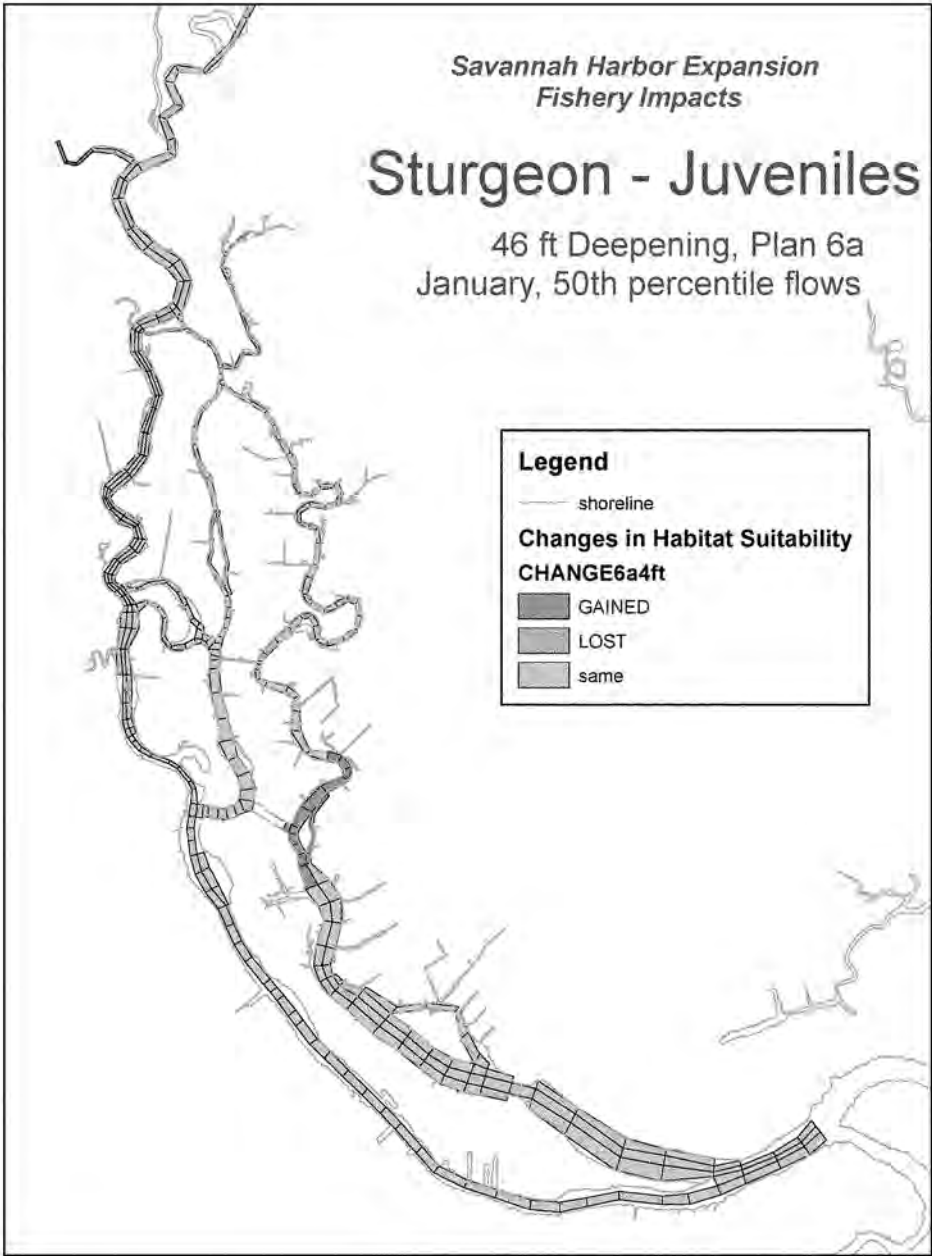
46 ft Deepening, Plan 6a  
January, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a4ft**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Adults

46 ft Deepening, Plan 6a  
January, 50th percentile flows

**Legend**

— shoreline

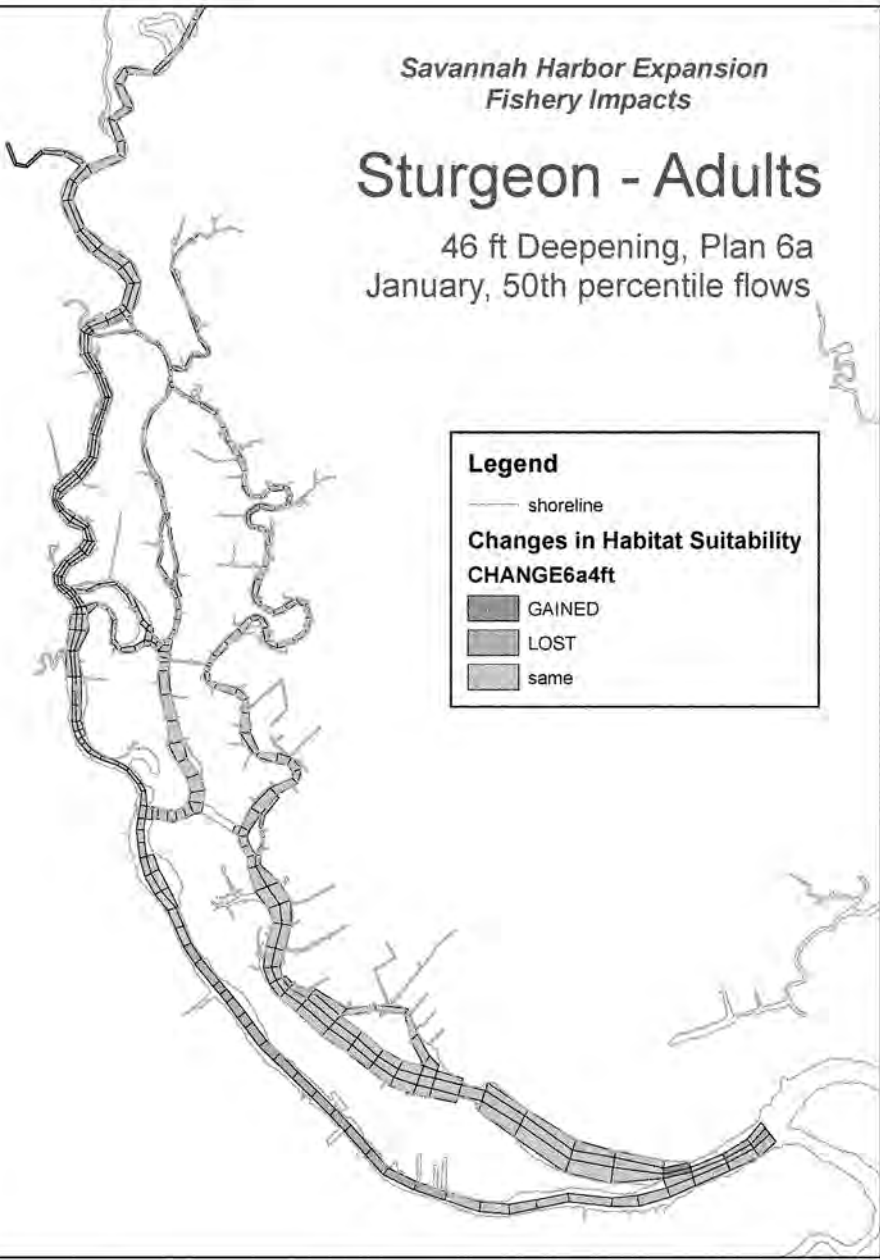
**Changes in Habitat Suitability**

**CHANGE6a4ft**

GAINED

LOST

same

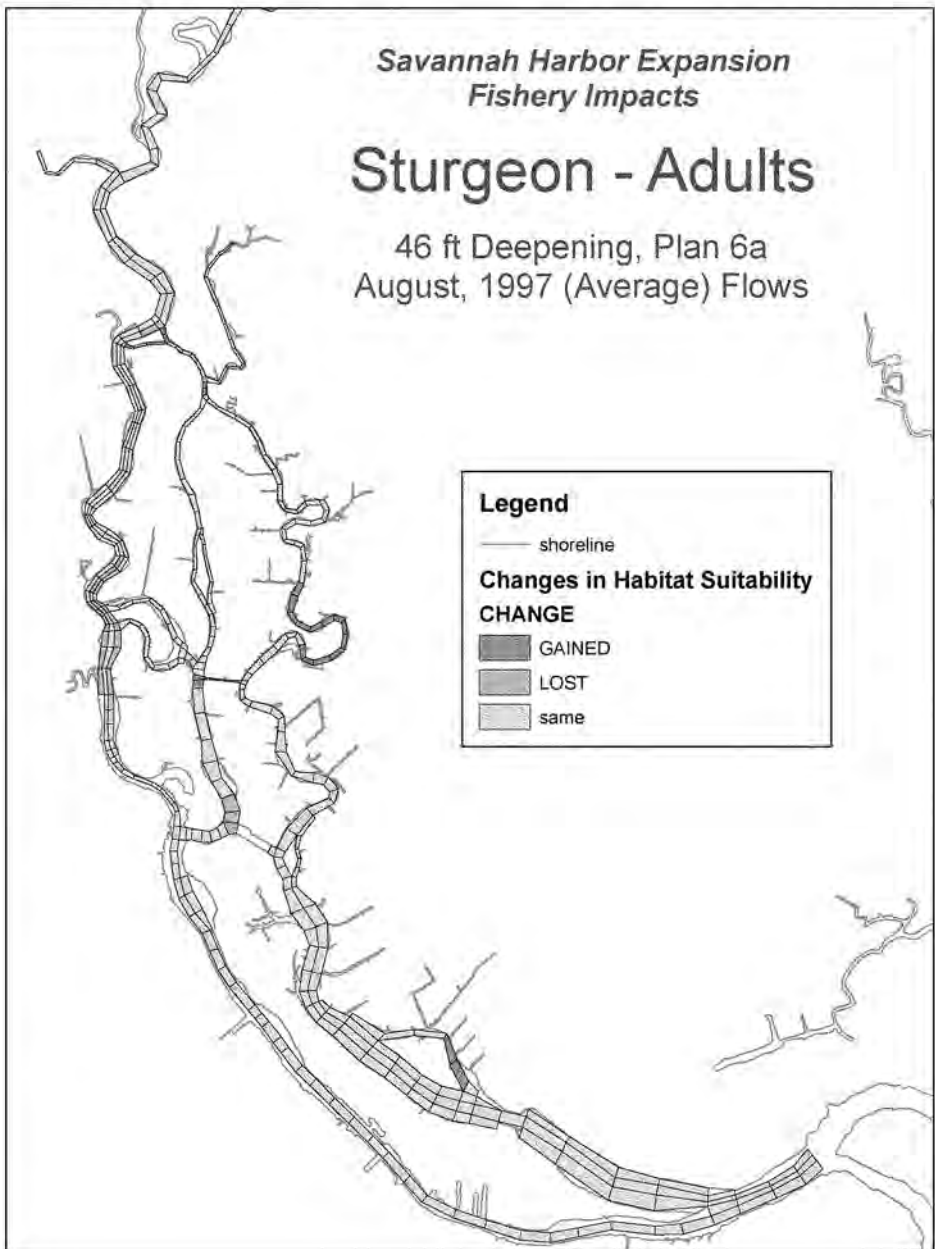




*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

46 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

## Southern Flounder

46 ft Deepening, Plan 6a  
August, 1997 (Average) Flows

### Legend

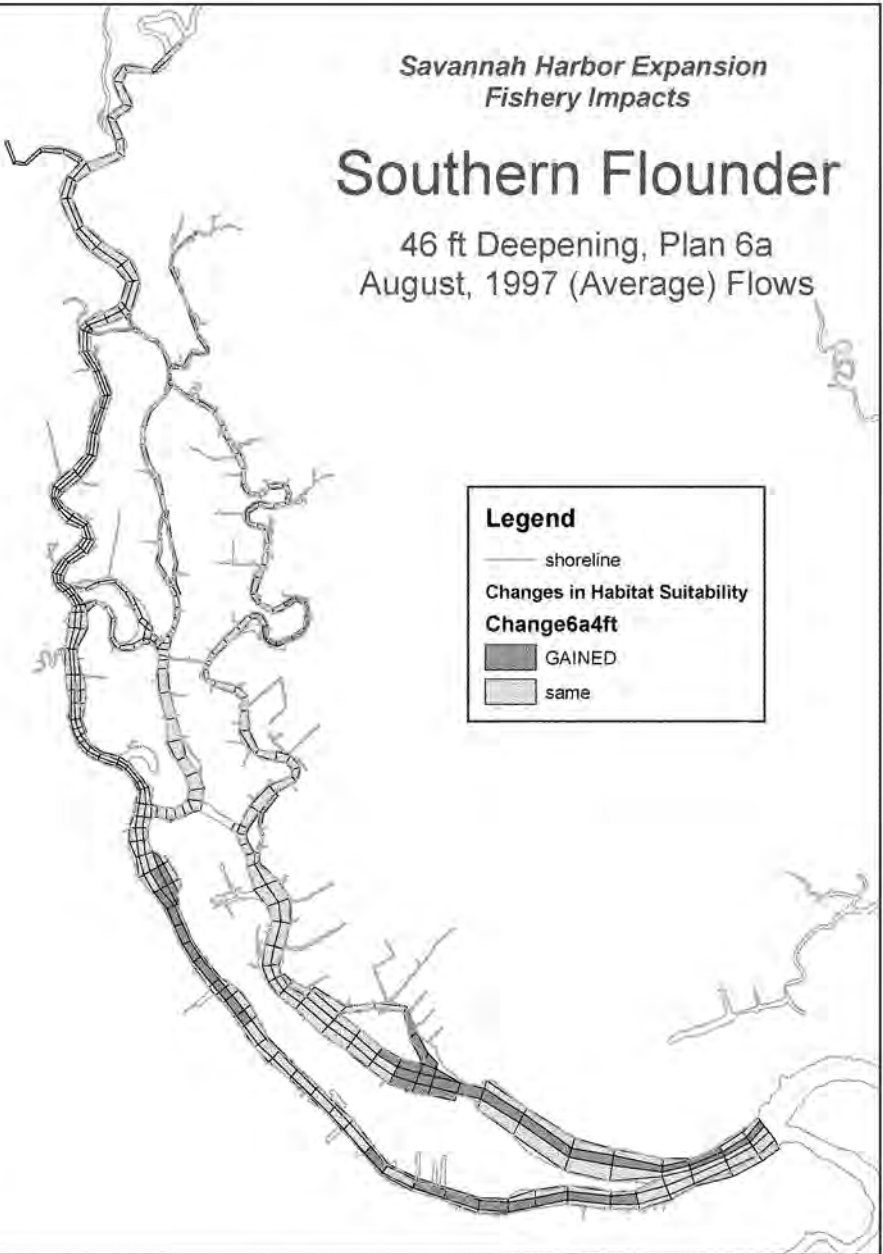
— shoreline

Changes in Habitat Suitability

**Change6a4ft**

■ GAINED

□ same



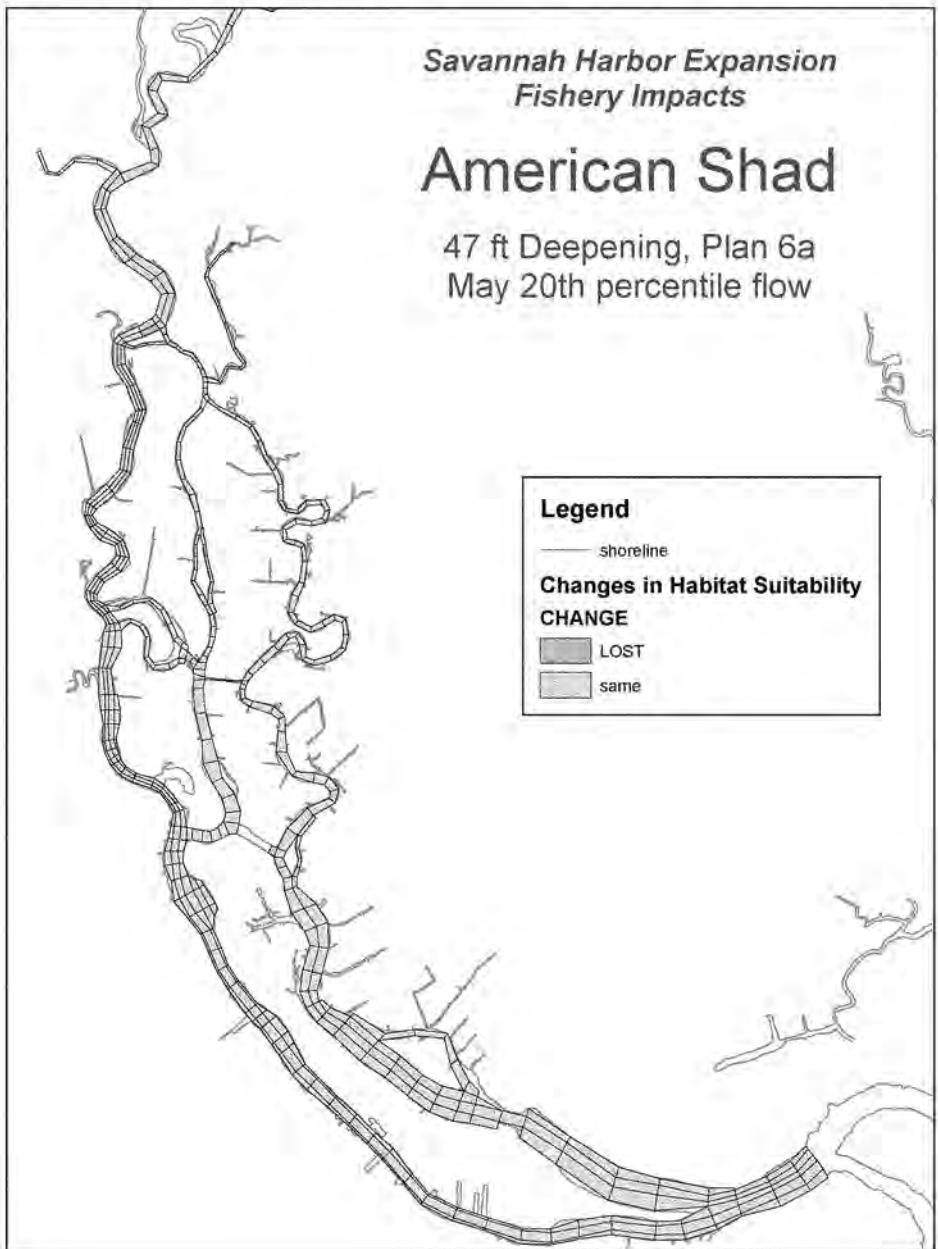
# **47 ft Channel Depth**

## *Mitigation Plan 6a*

*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

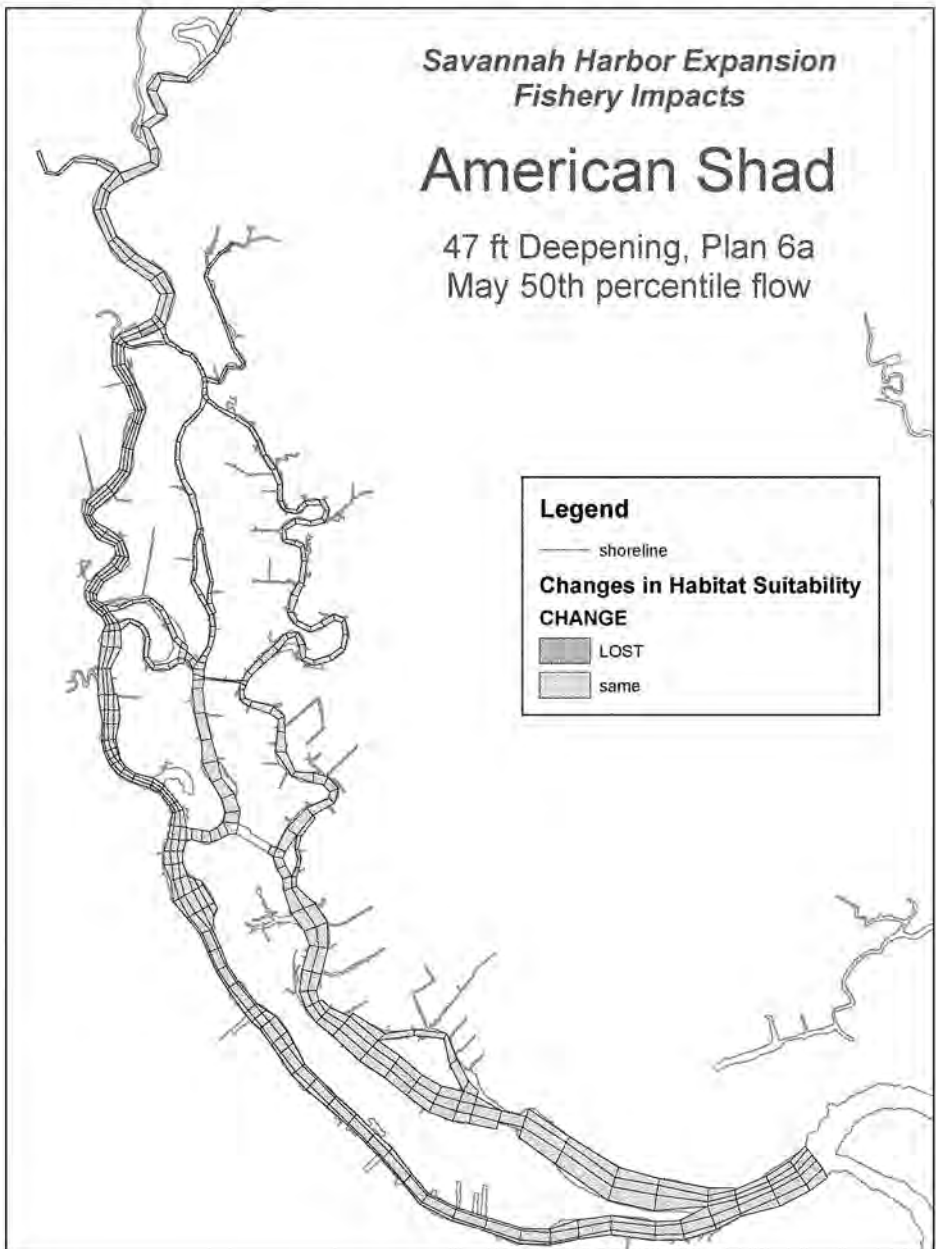
47 ft Deepening, Plan 6a  
May 20th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

47 ft Deepening, Plan 6a  
May 50th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

47 ft Deepening, Plan 6a  
May 80th percentile flow

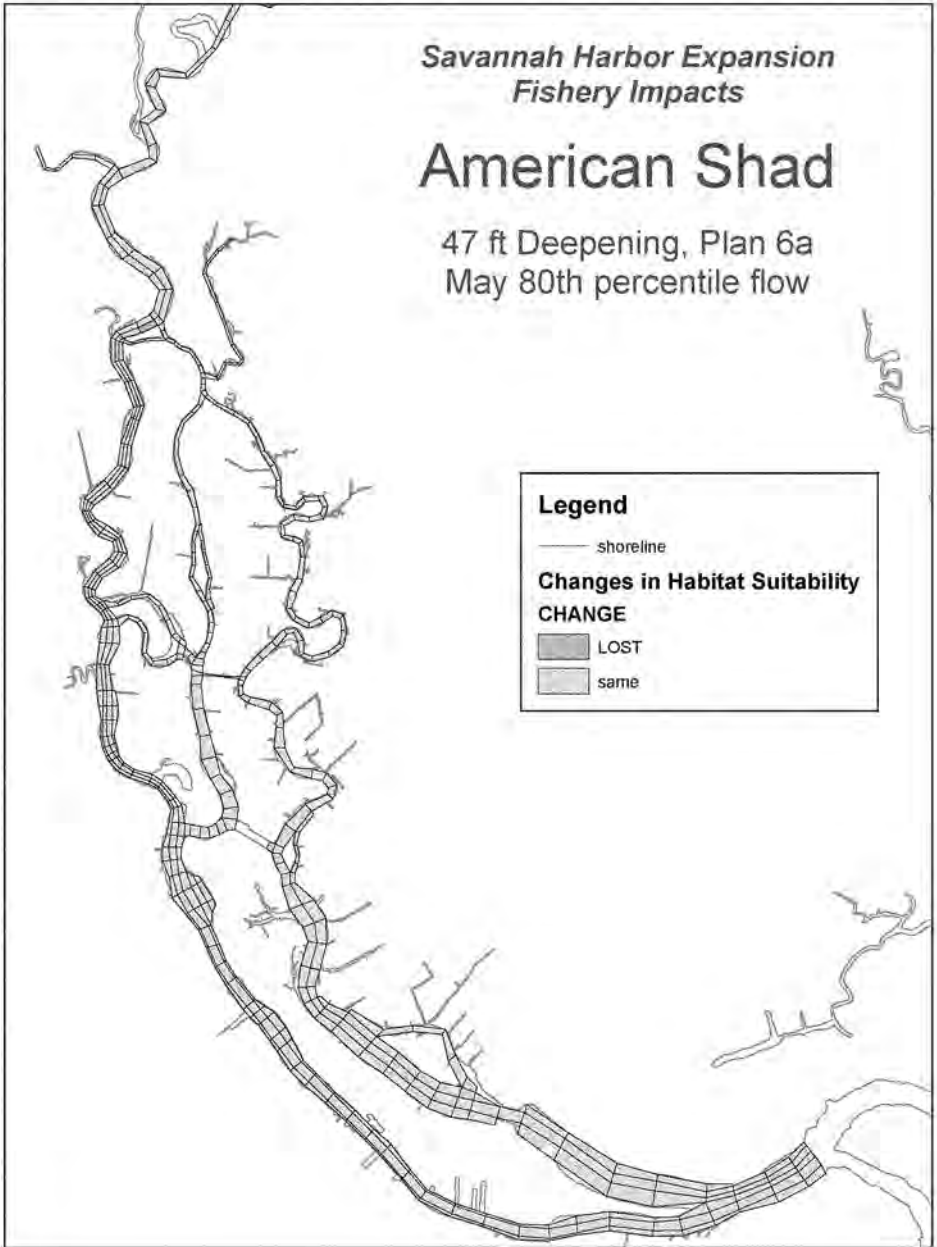
### Legend

— shoreline

### Changes in Habitat Suitability CHANGE

■ LOST

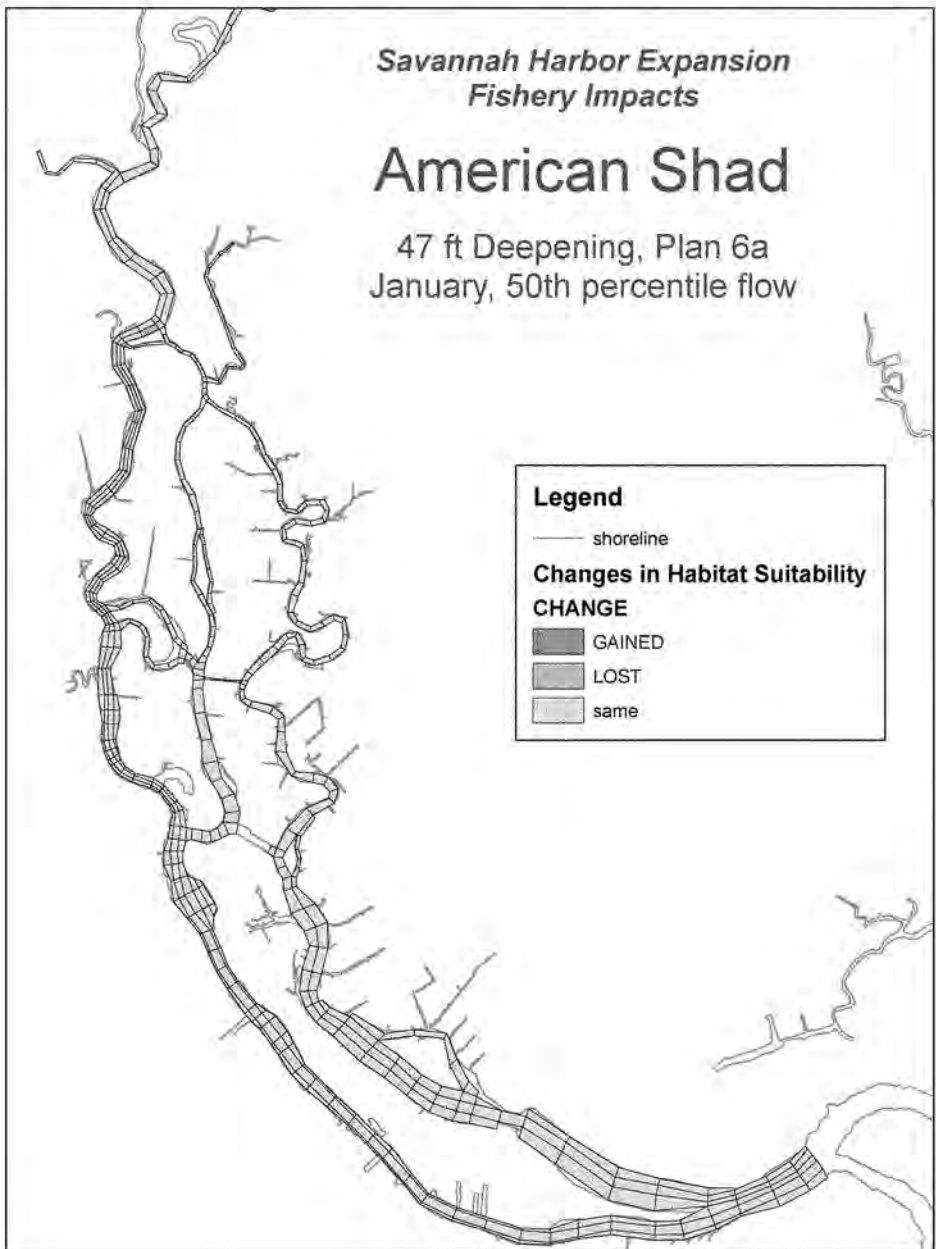
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

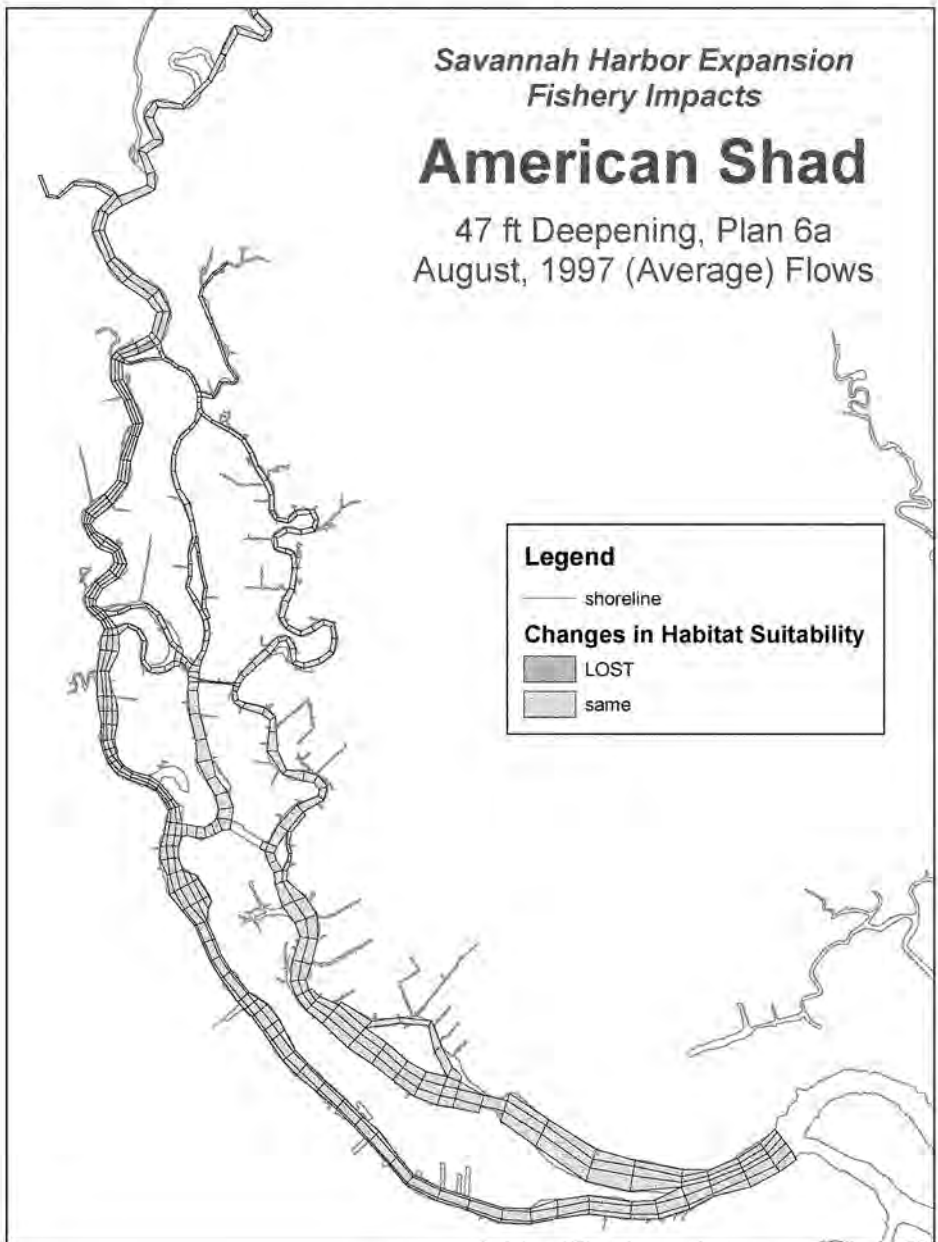
47 ft Deepening, Plan 6a  
January, 50th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

47 ft Deepening, Plan 6a  
August, 1997 (Average) Flows

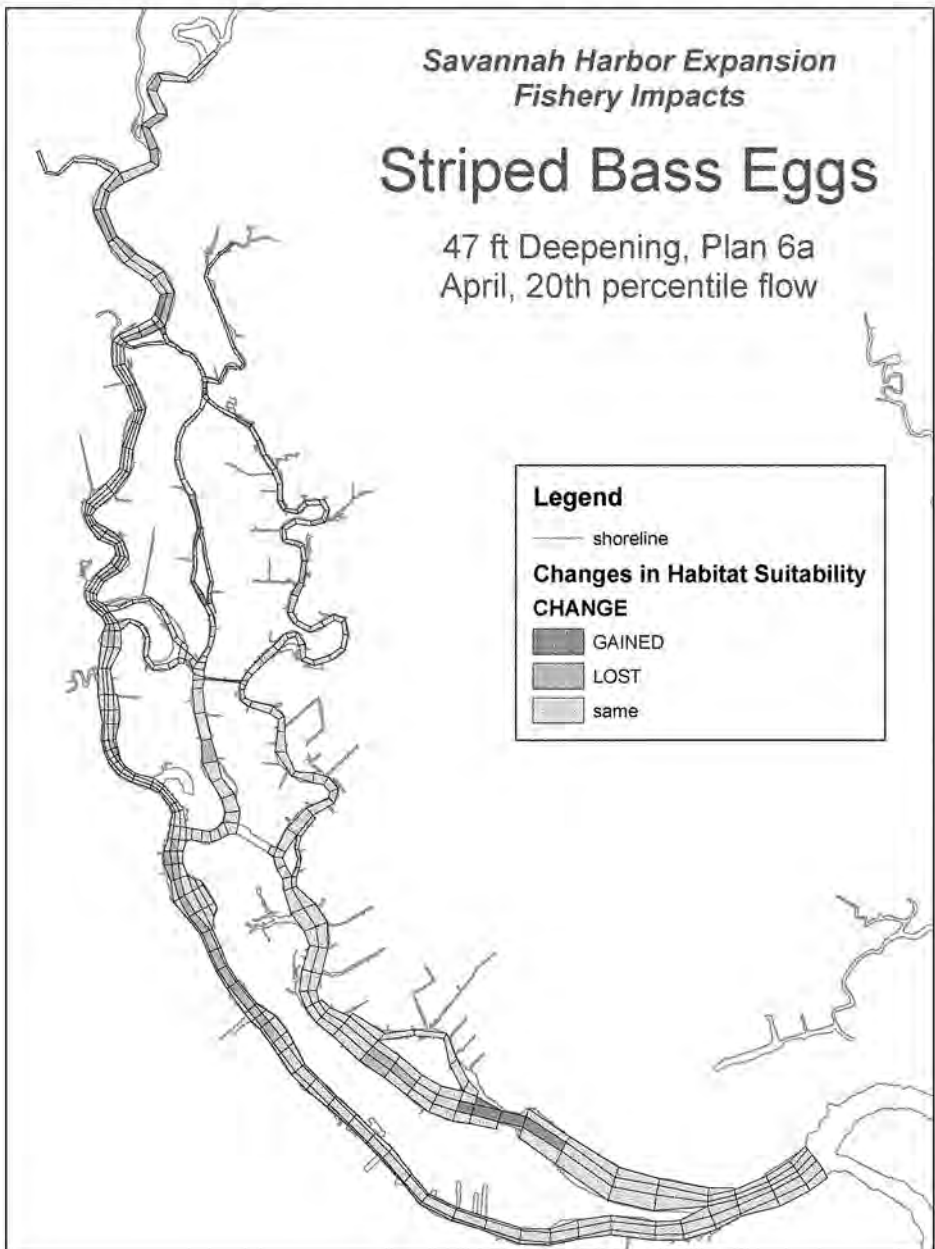




*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Eggs

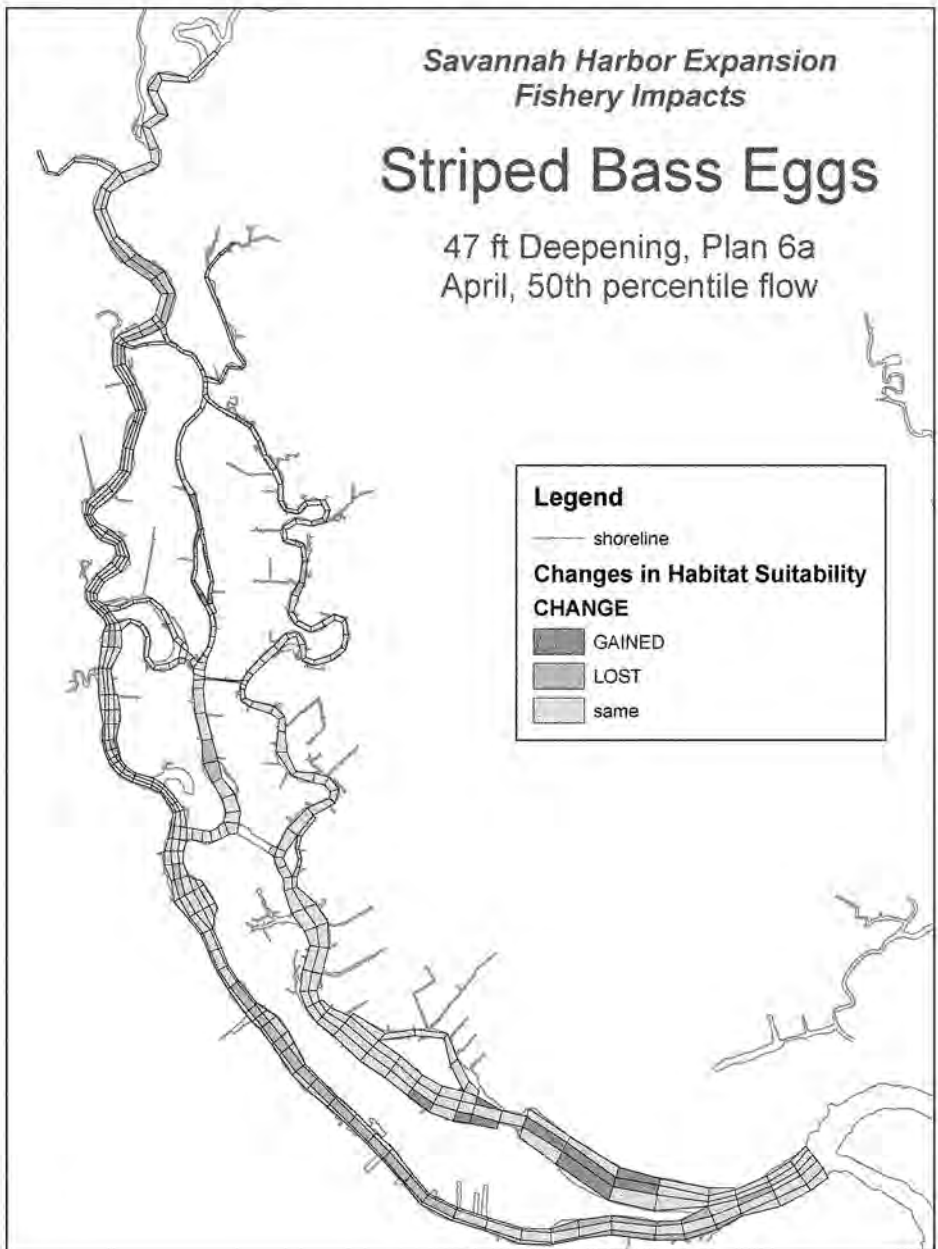
47 ft Deepening, Plan 6a  
April, 20th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Eggs

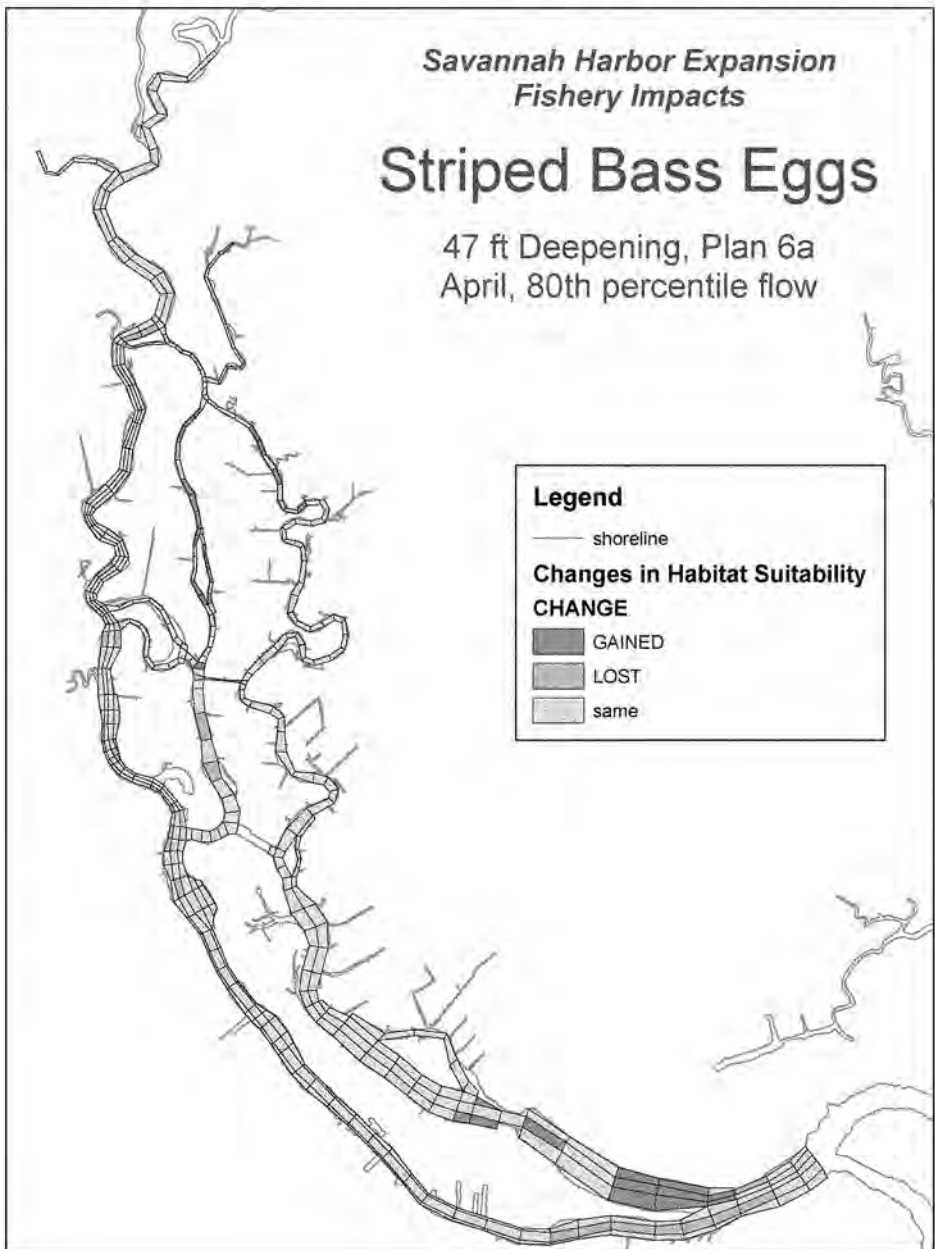
47 ft Deepening, Plan 6a  
April, 50th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Eggs

47 ft Deepening, Plan 6a  
April, 80th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Larvae

47 ft Deepening, Plan 6a  
May, 20th percentile flow

### Legend

— shoreline

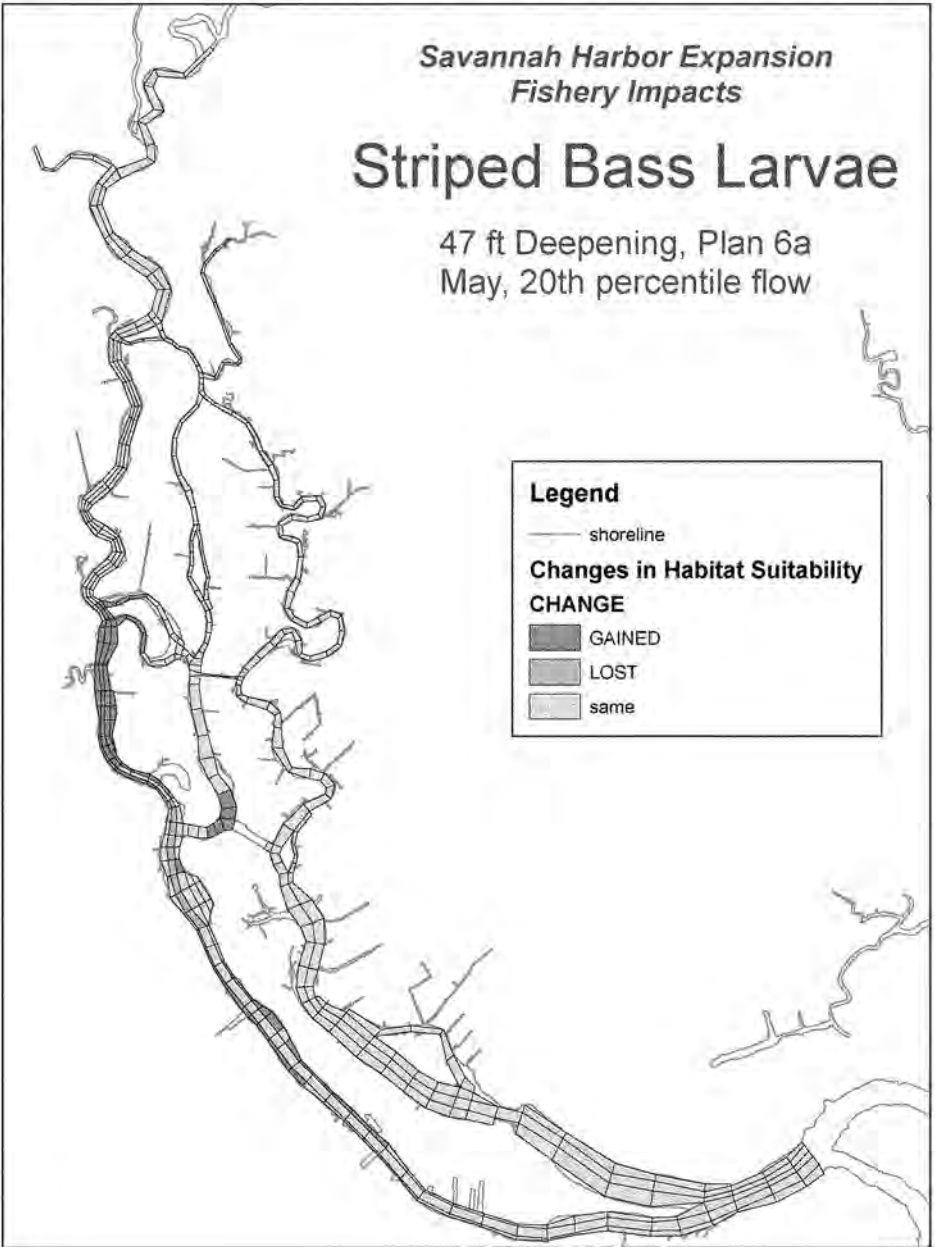
### Changes in Habitat Suitability

#### CHANGE

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Larvae

47 ft Deepening, Plan 6a  
May, 50th percentile flow

### Legend

— shoreline

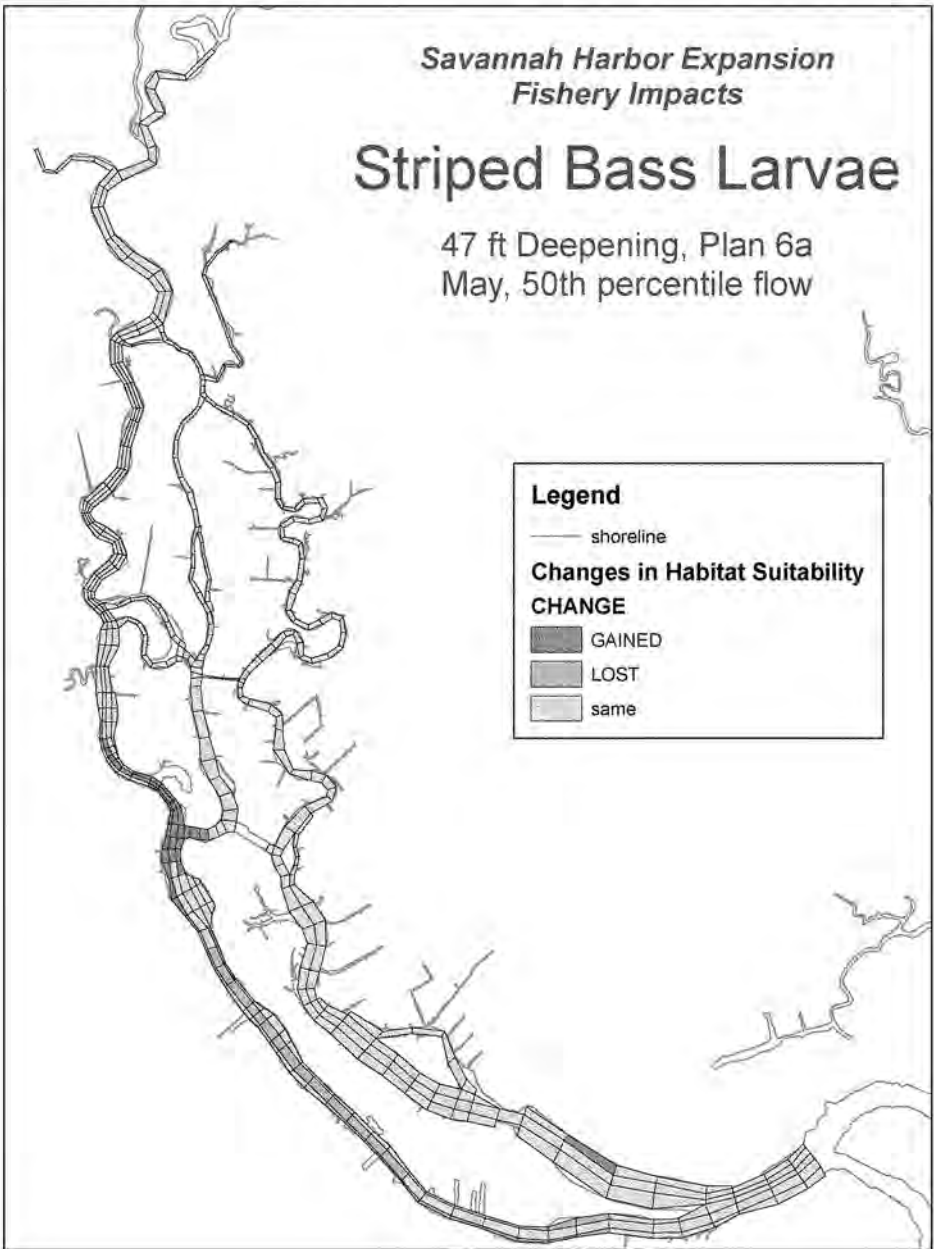
### Changes in Habitat Suitability

#### CHANGE

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Larvae

47 ft Deepening, Plan 6a  
May, 80th percentile flow

### Legend

— shoreline

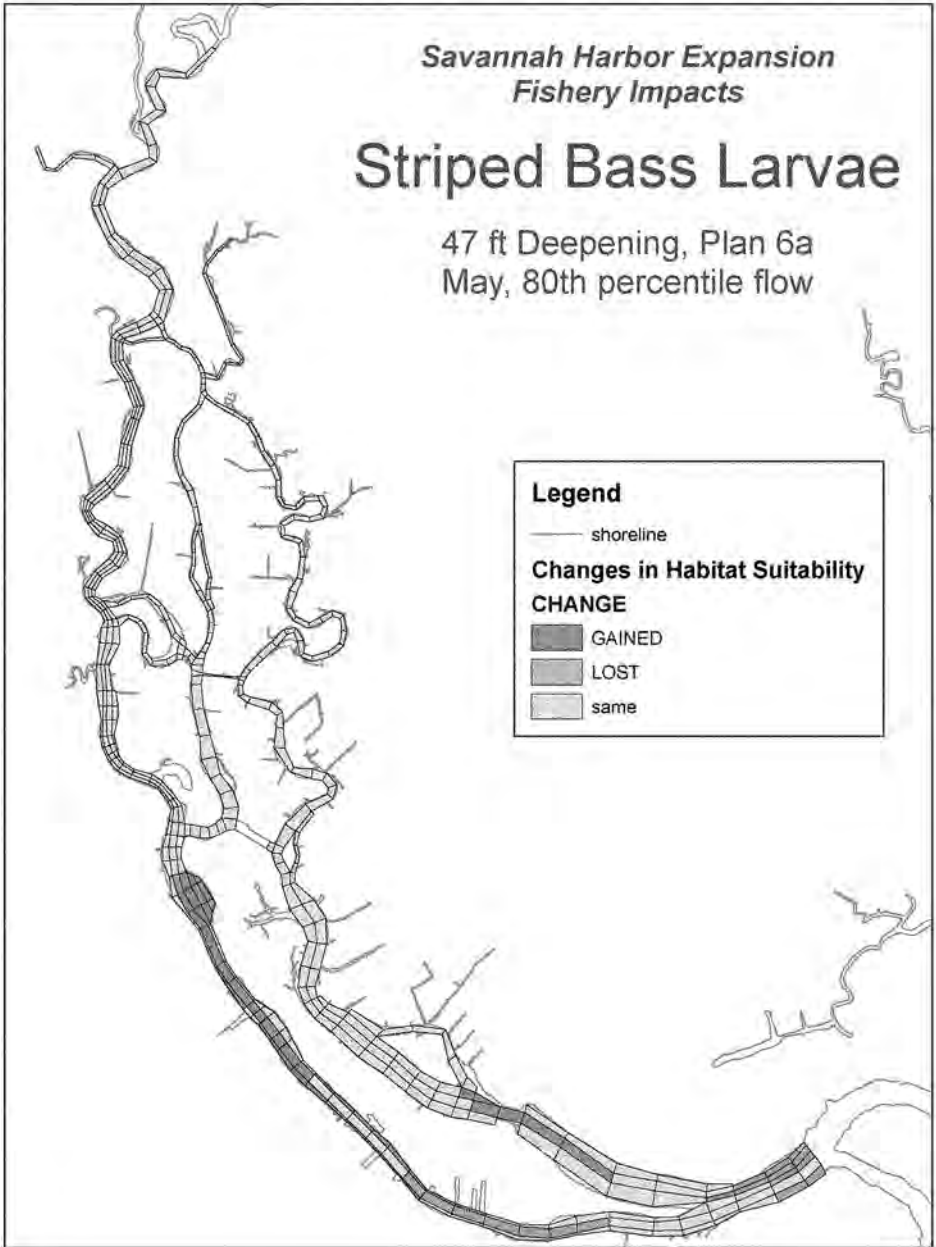
### Changes in Habitat Suitability

#### CHANGE

■ GAINED

■ LOST

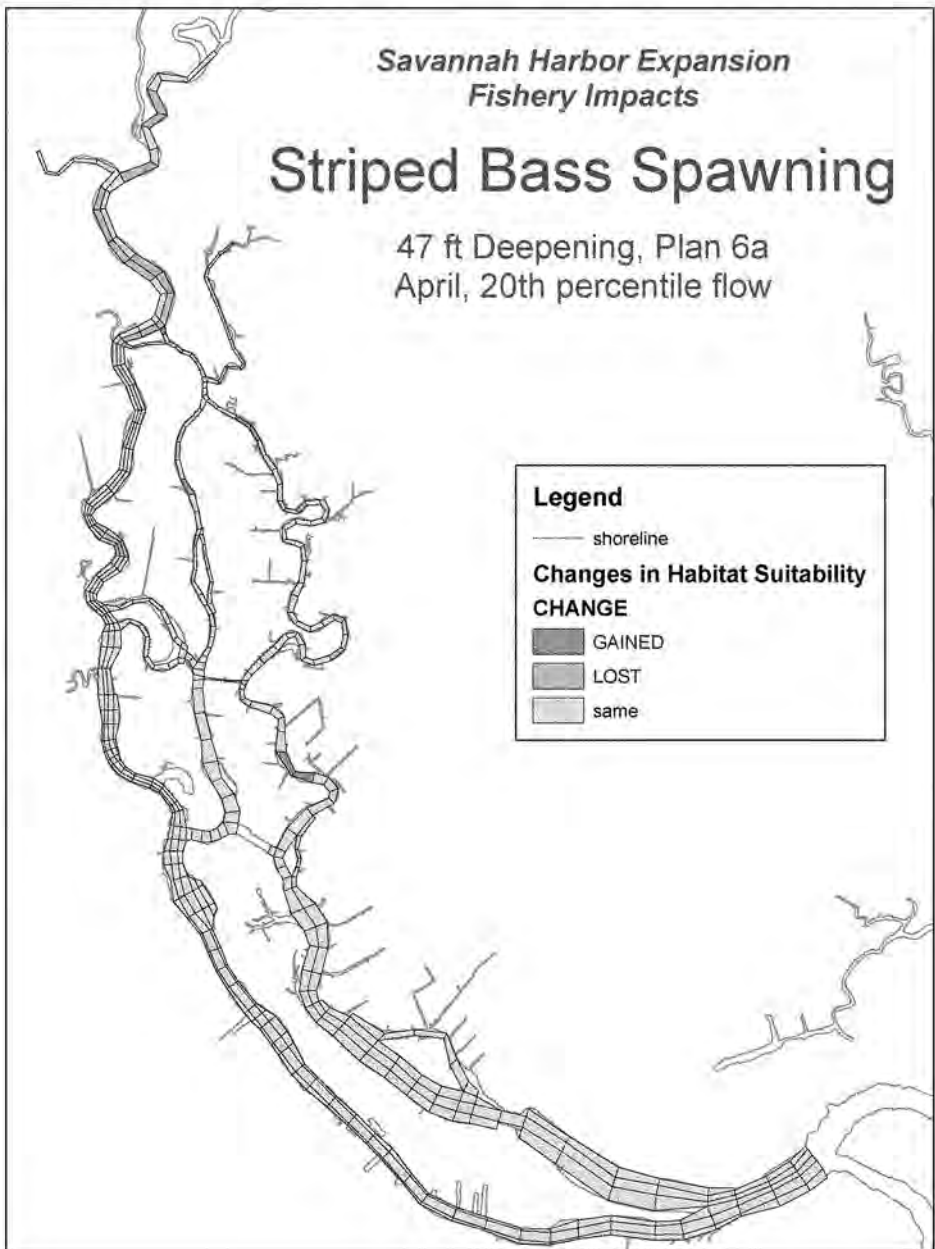
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Spawning

47 ft Deepening, Plan 6a  
April, 20th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## Striped Bass Spawning

47 ft Deepening, Plan 6a  
April, 50th percentile flow

### Legend

— shoreline

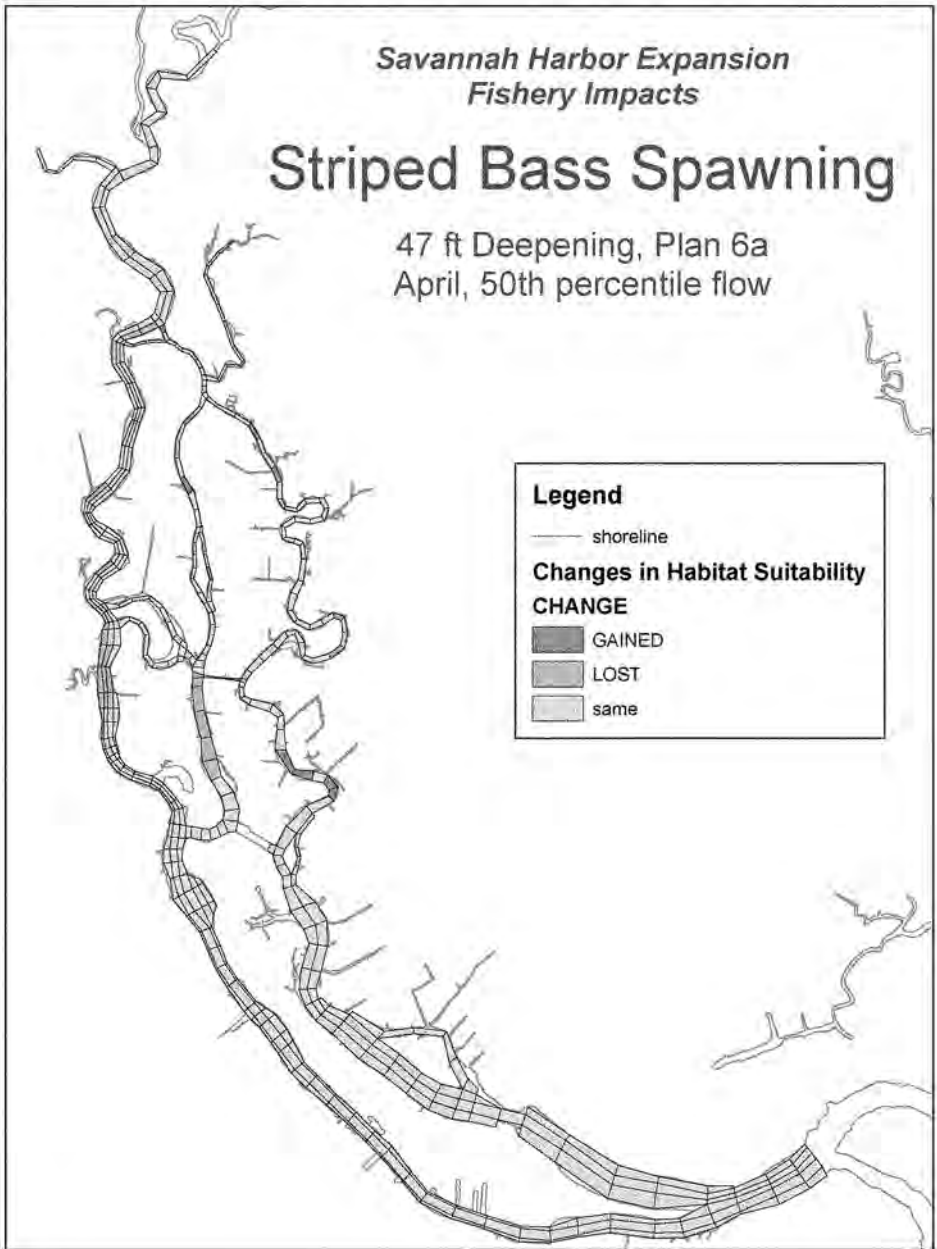
### Changes in Habitat Suitability

#### CHANGE

■ GAINED

■ LOST

■ same





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

47 ft Deepening, Plan 6a  
April, 80th percentile flow

## Legend

— shoreline

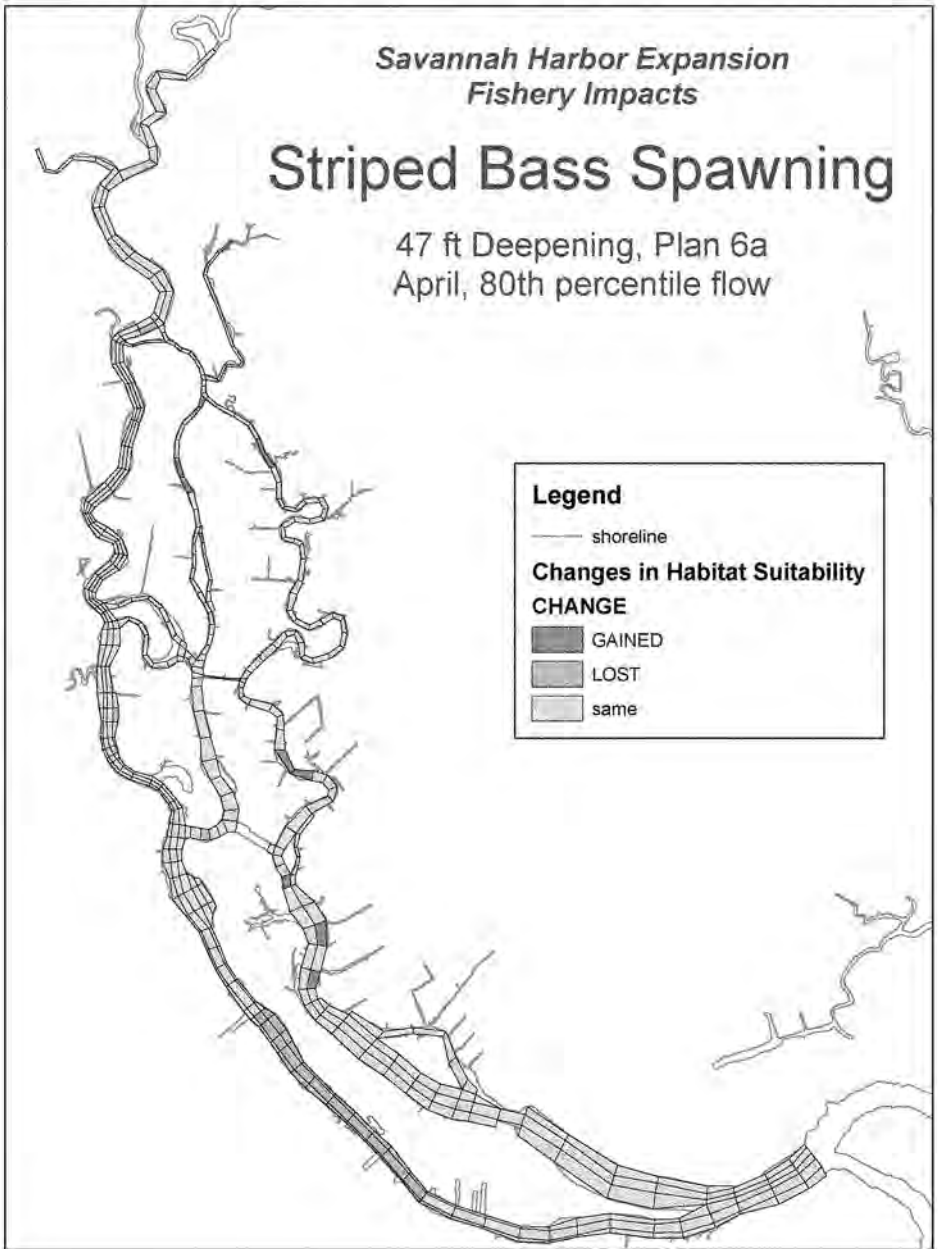
### Changes in Habitat Suitability

#### CHANGE

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Juveniles

47 ft Deepening, Plan 6a  
January, 50th percentile flow

### Legend

— shoreline

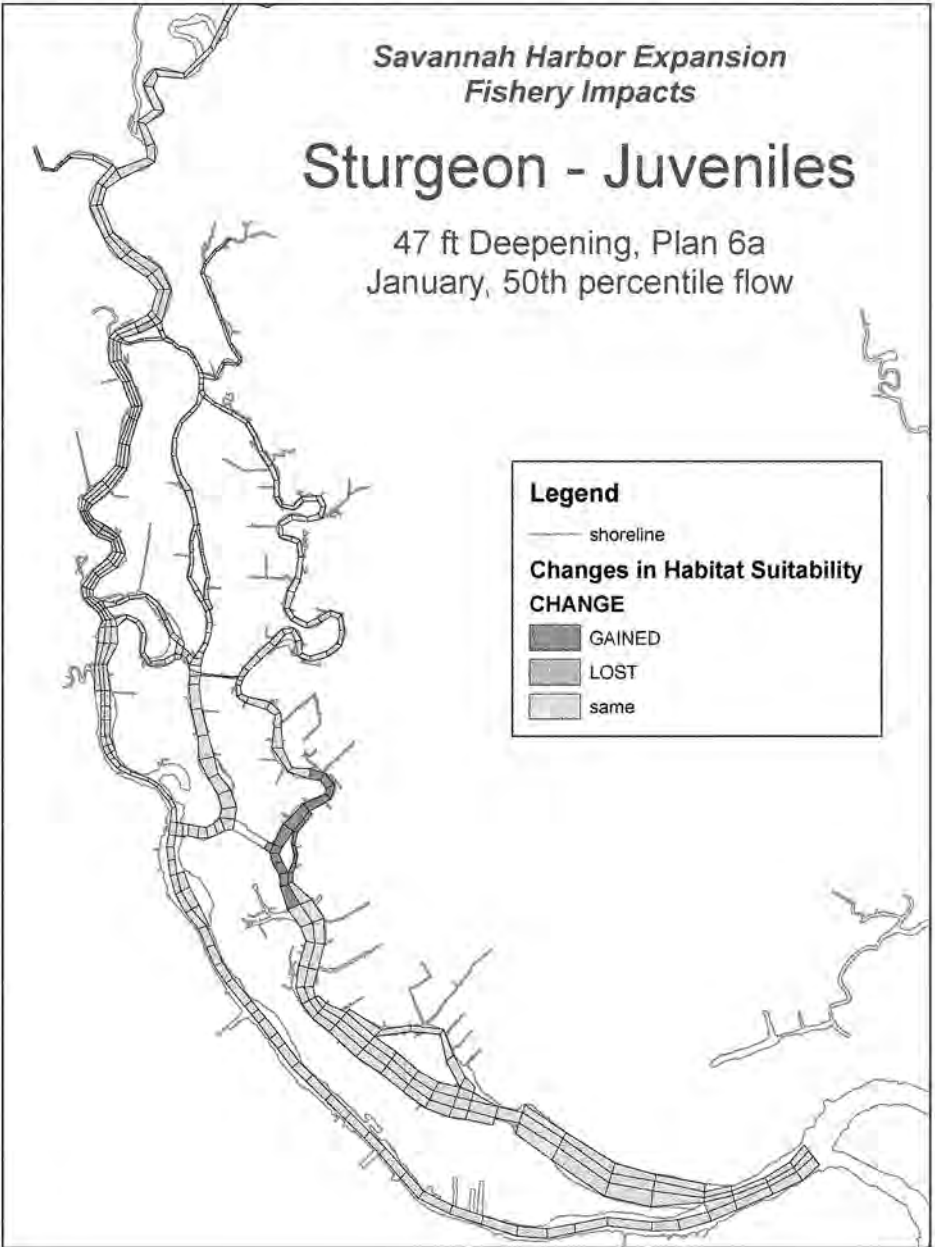
### Changes in Habitat Suitability

#### CHANGE

■ GAINED

■ LOST

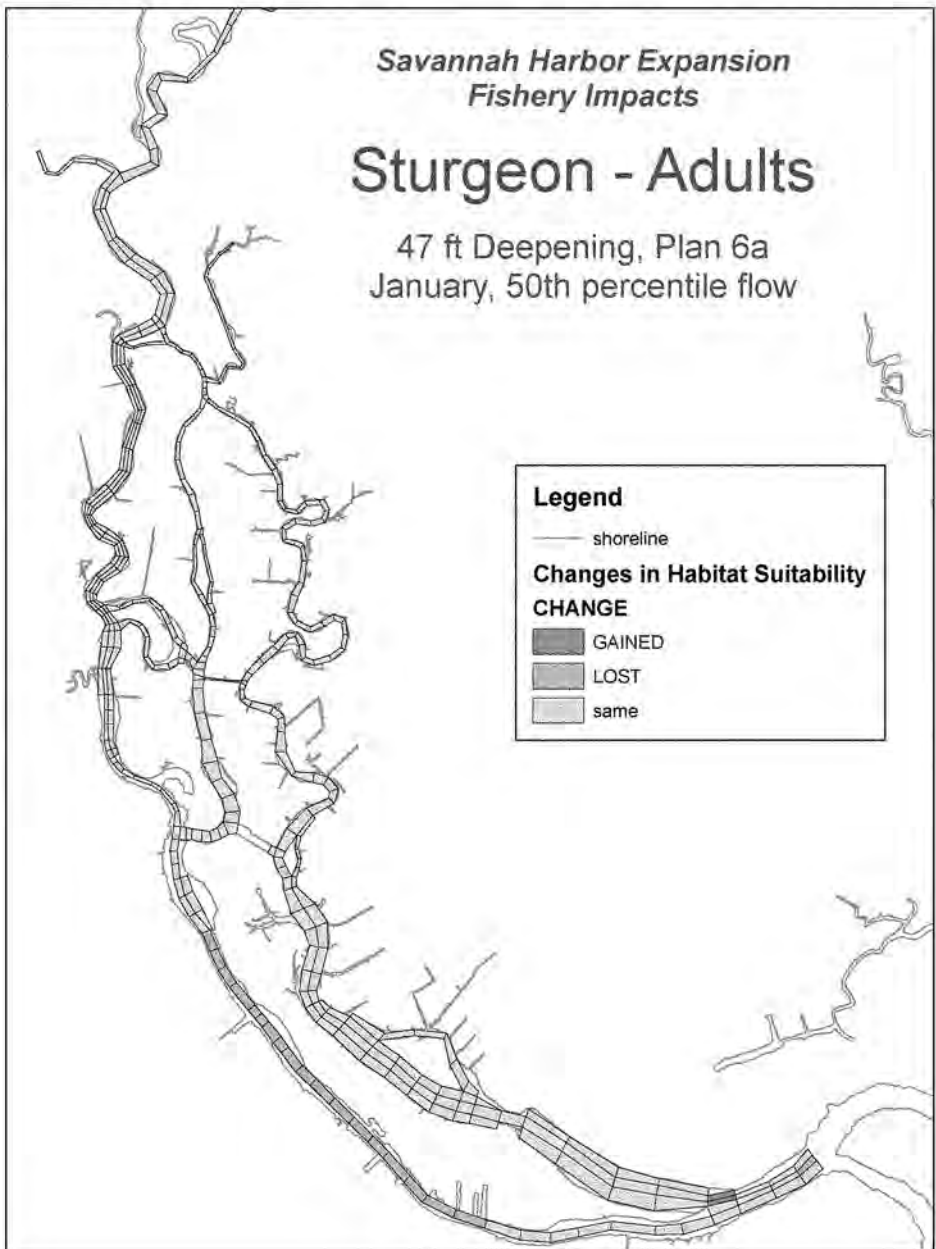
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

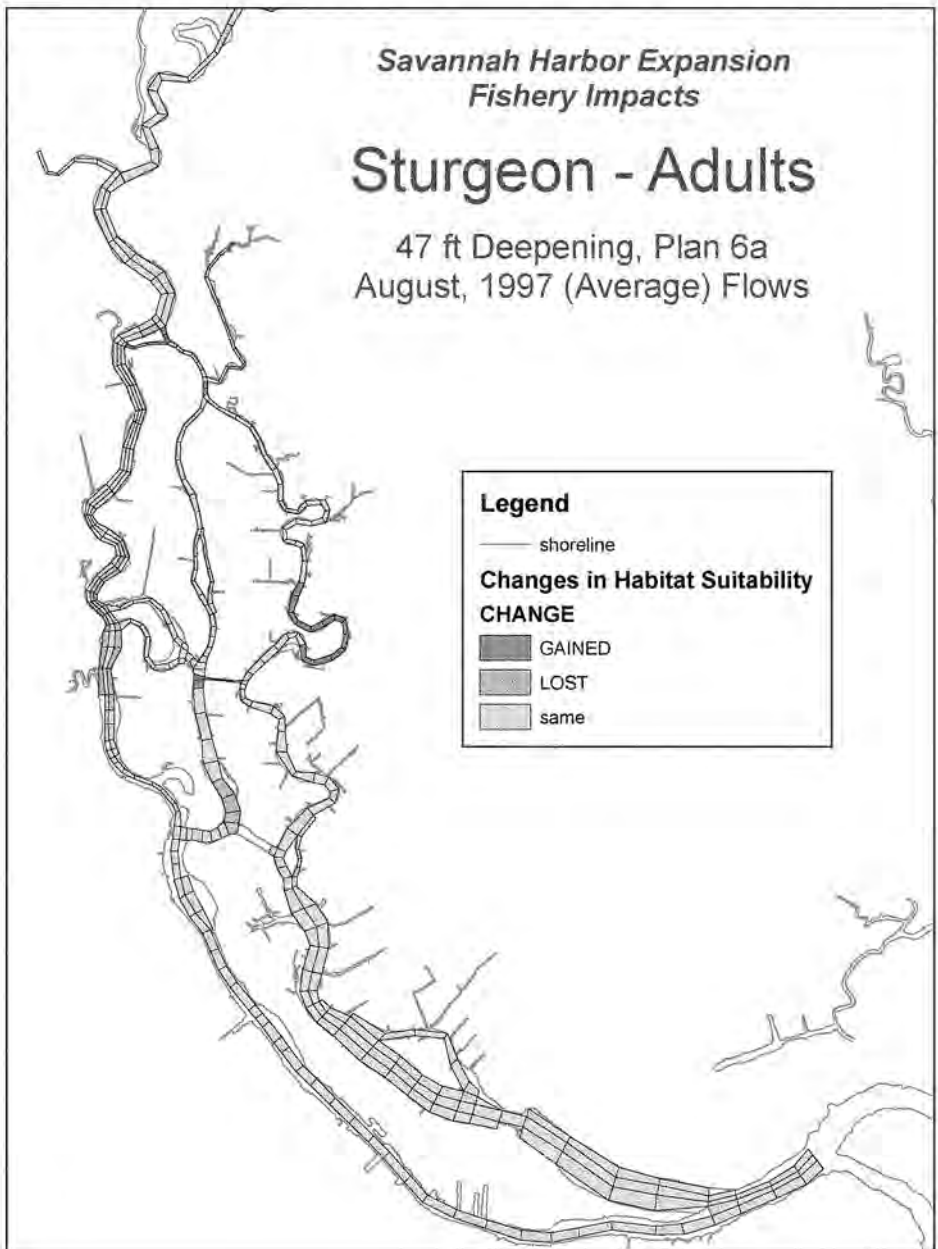
47 ft Deepening, Plan 6a  
January, 50th percentile flow



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

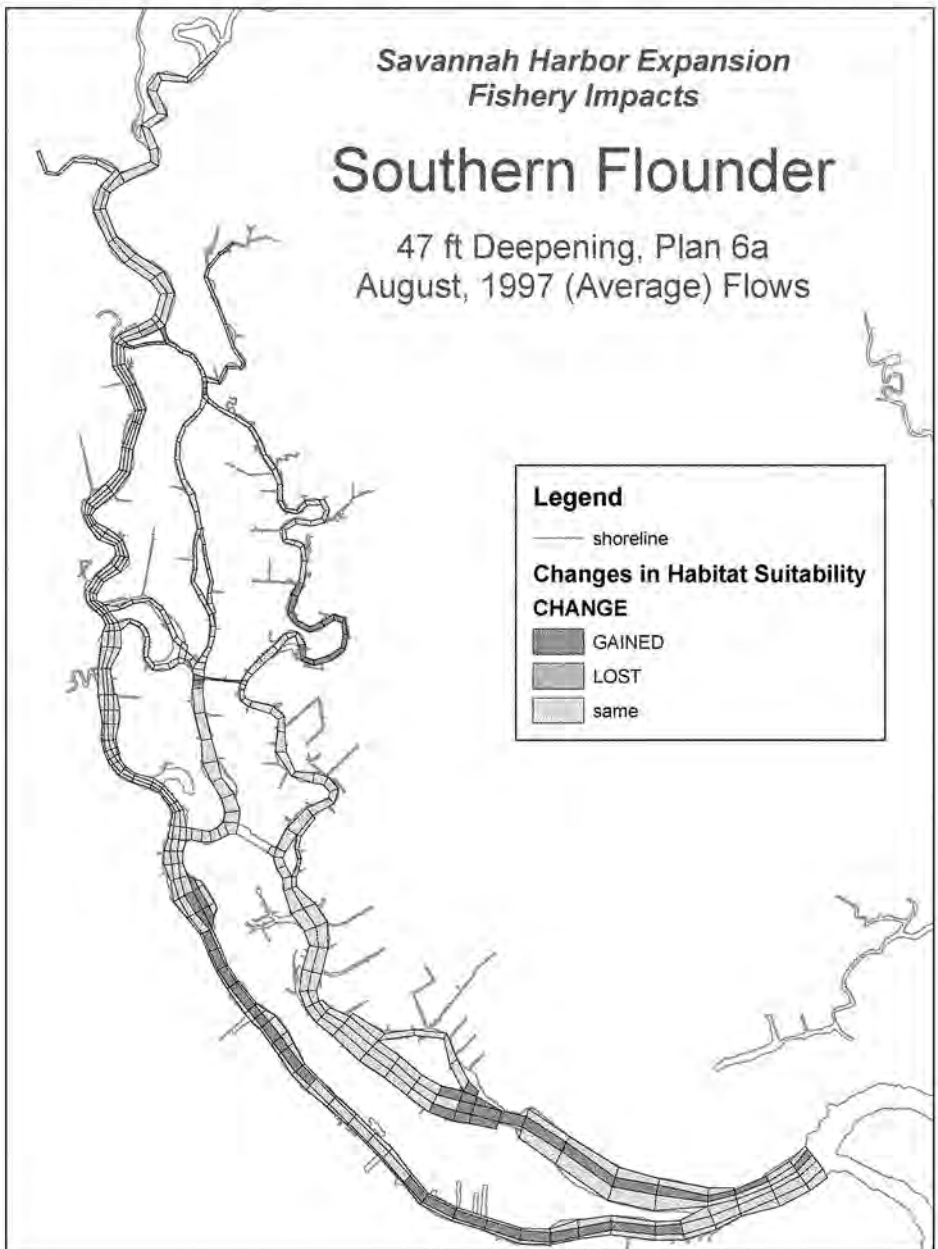
47 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

## Southern Flounder

47 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



# **48 ft Channel Depth**

## *Mitigation Plan 6a*

*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

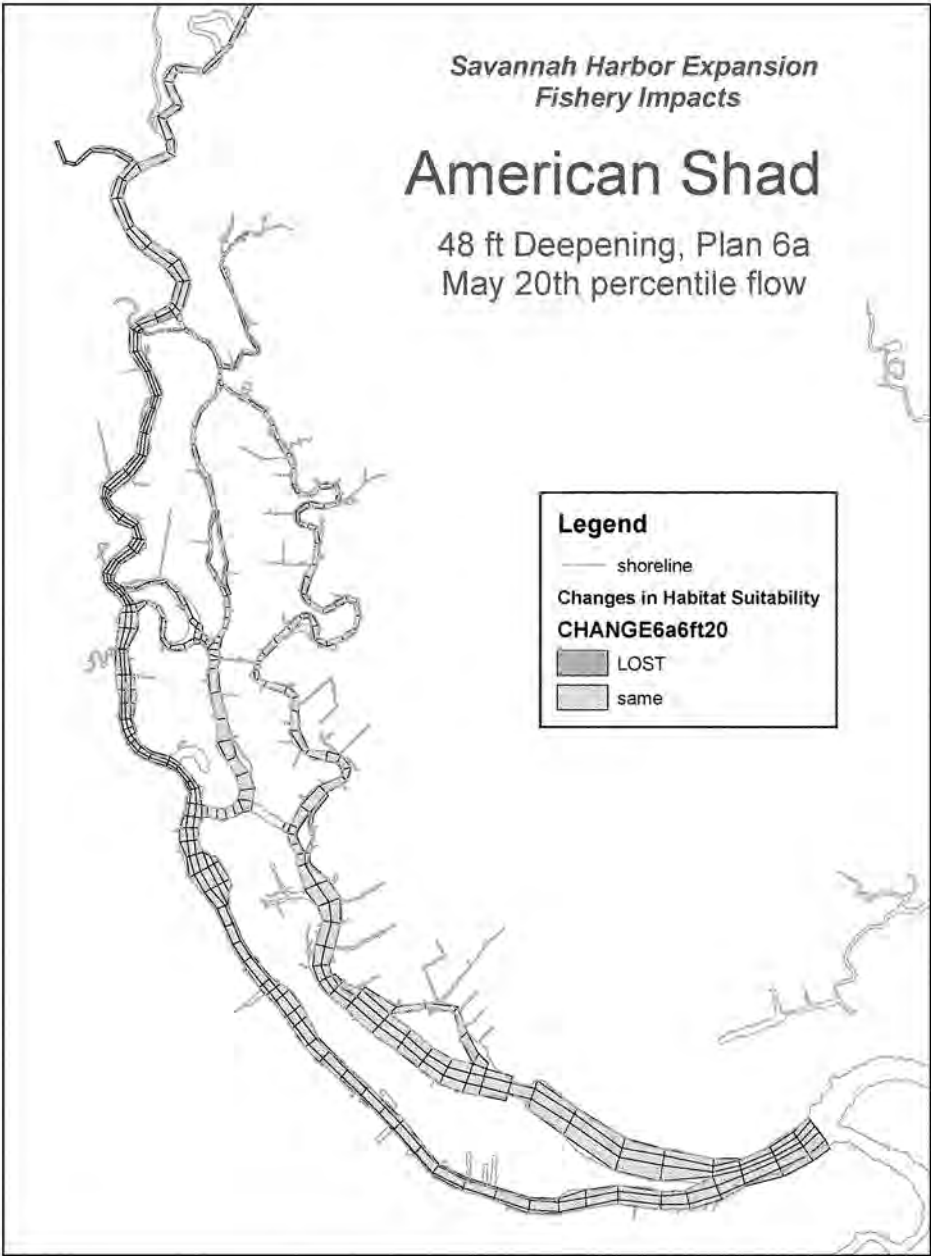
48 ft Deepening, Plan 6a  
May 20th percentile flow

**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6a6ft20**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

48 ft Deepening, Plan 6a  
May 50th percentile flow

### Legend

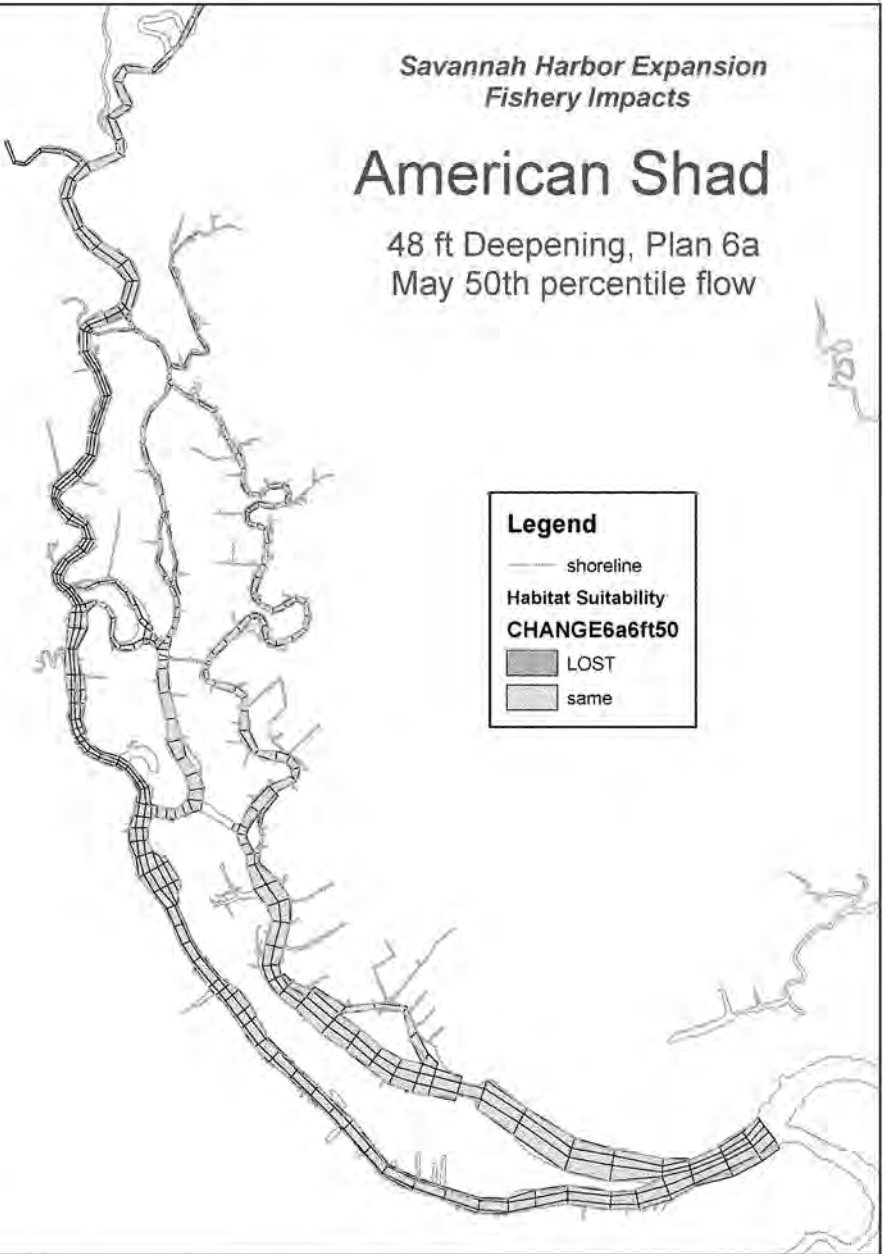
— shoreline

Habitat Suitability

**CHANGE6a6ft50**

■ LOST

■ same





*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

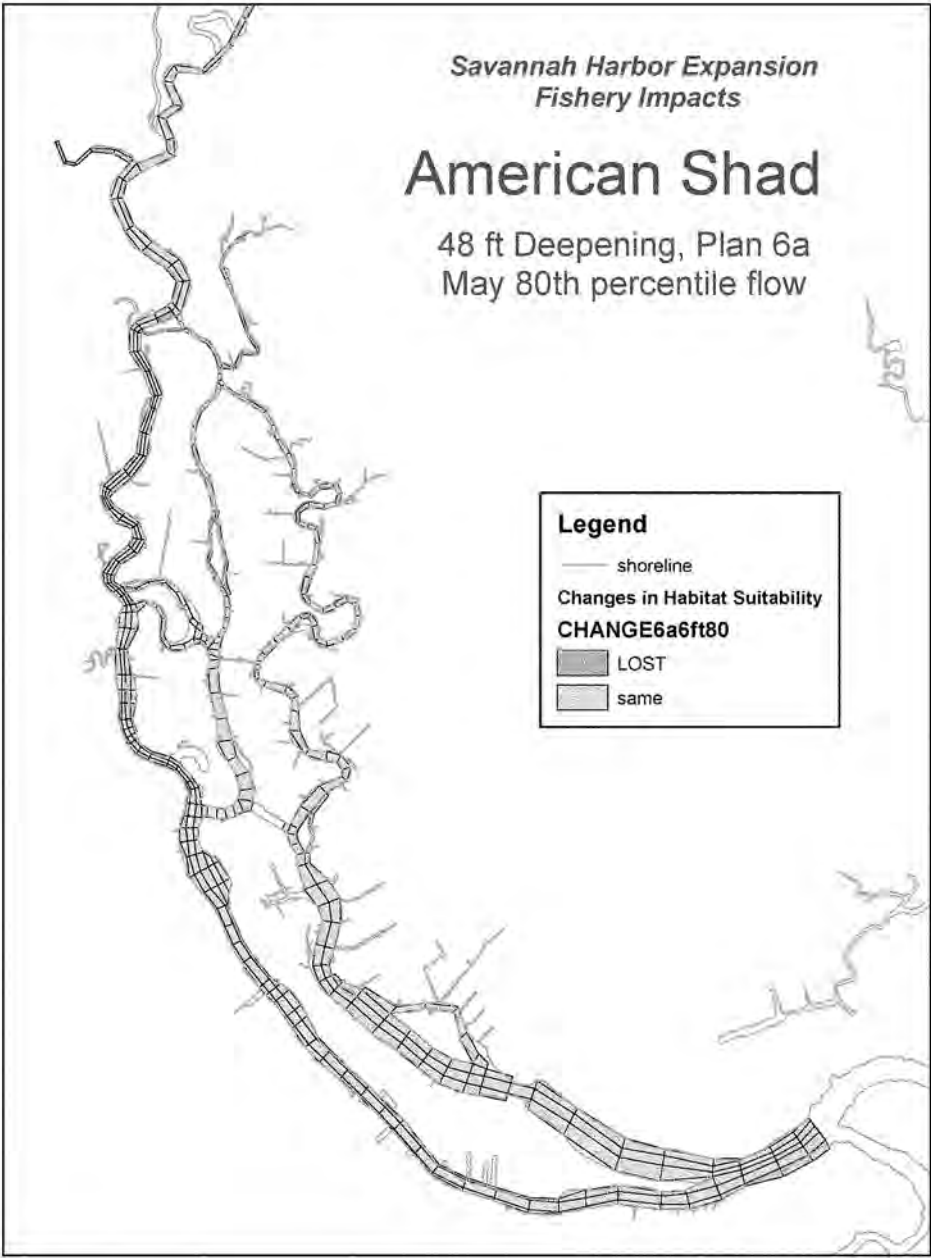
48 ft Deepening, Plan 6a  
May 80th percentile flow

**Legend**

— shoreline

Changes in Habitat Suitability  
**CHANGE6a6ft80**

|                                                                                   |      |
|-----------------------------------------------------------------------------------|------|
|  | LOST |
|  | same |



*Savannah Harbor Expansion  
Fishery Impacts*

# American Shad

48 ft Deepening, Plan 6a  
January 50th percentile flow

## Legend

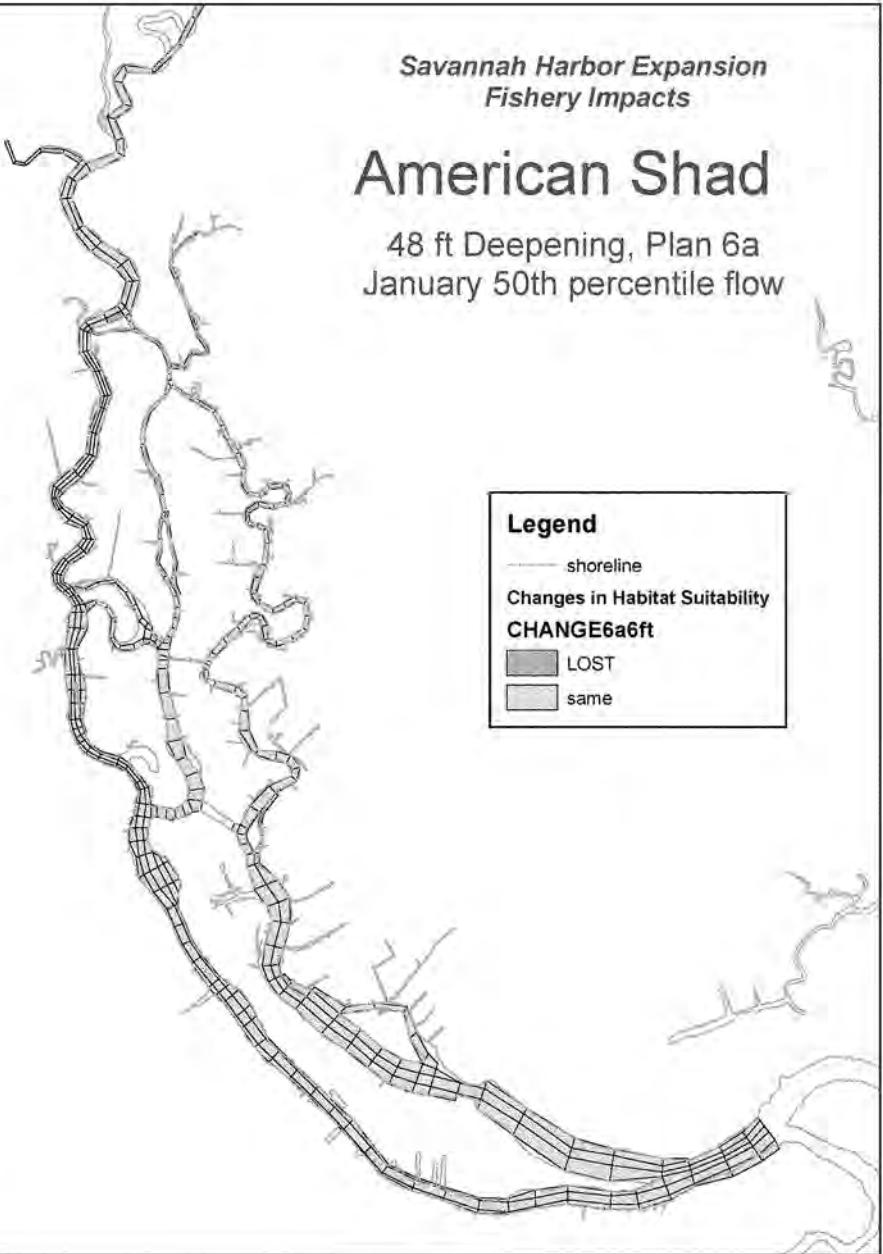
— shoreline

Changes in Habitat Suitability

**CHANGE6a6ft**

■ LOST

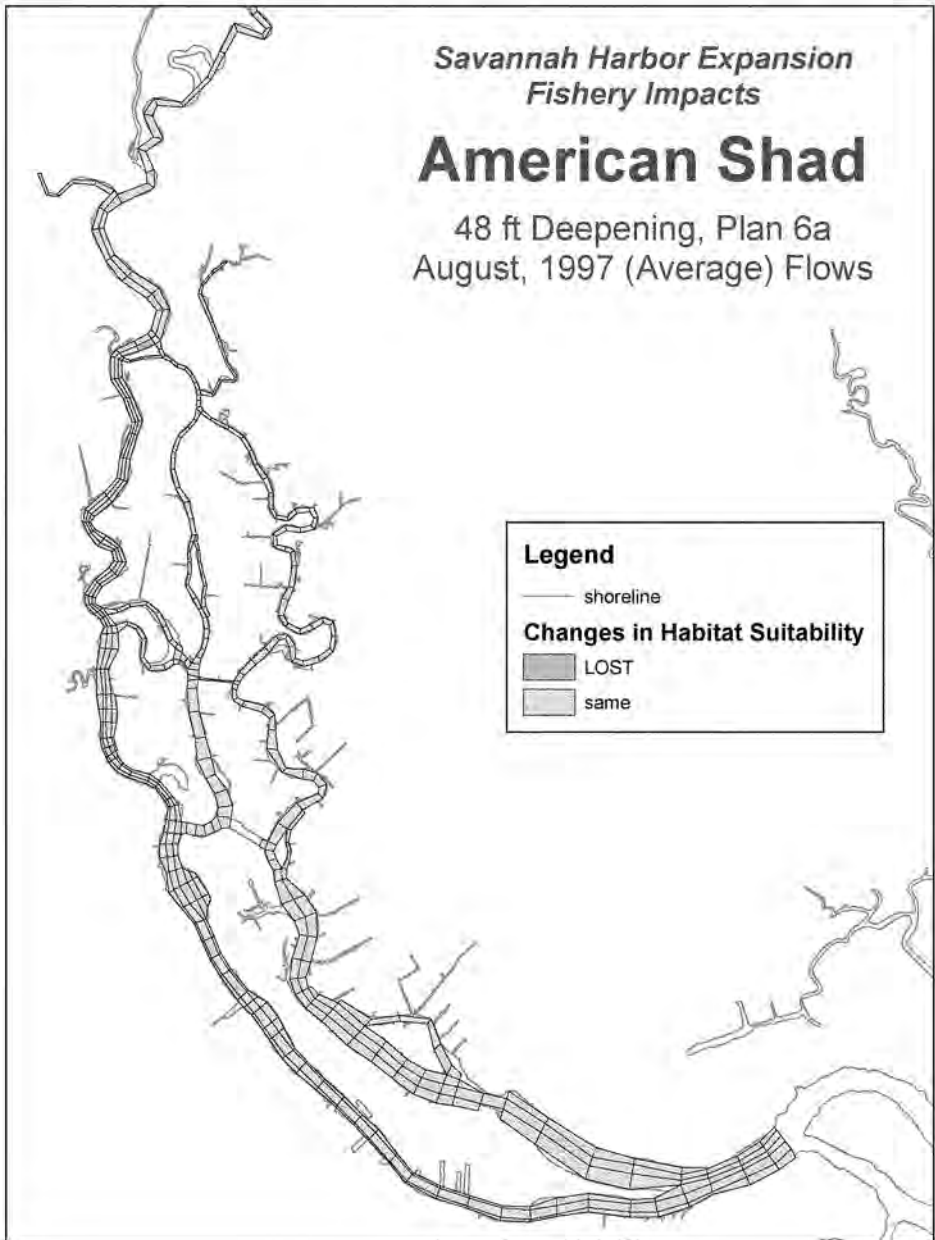
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## American Shad

48 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

48 ft Deepening, Plan 6a  
April, 20th percentile flows

## Legend

— shoreline

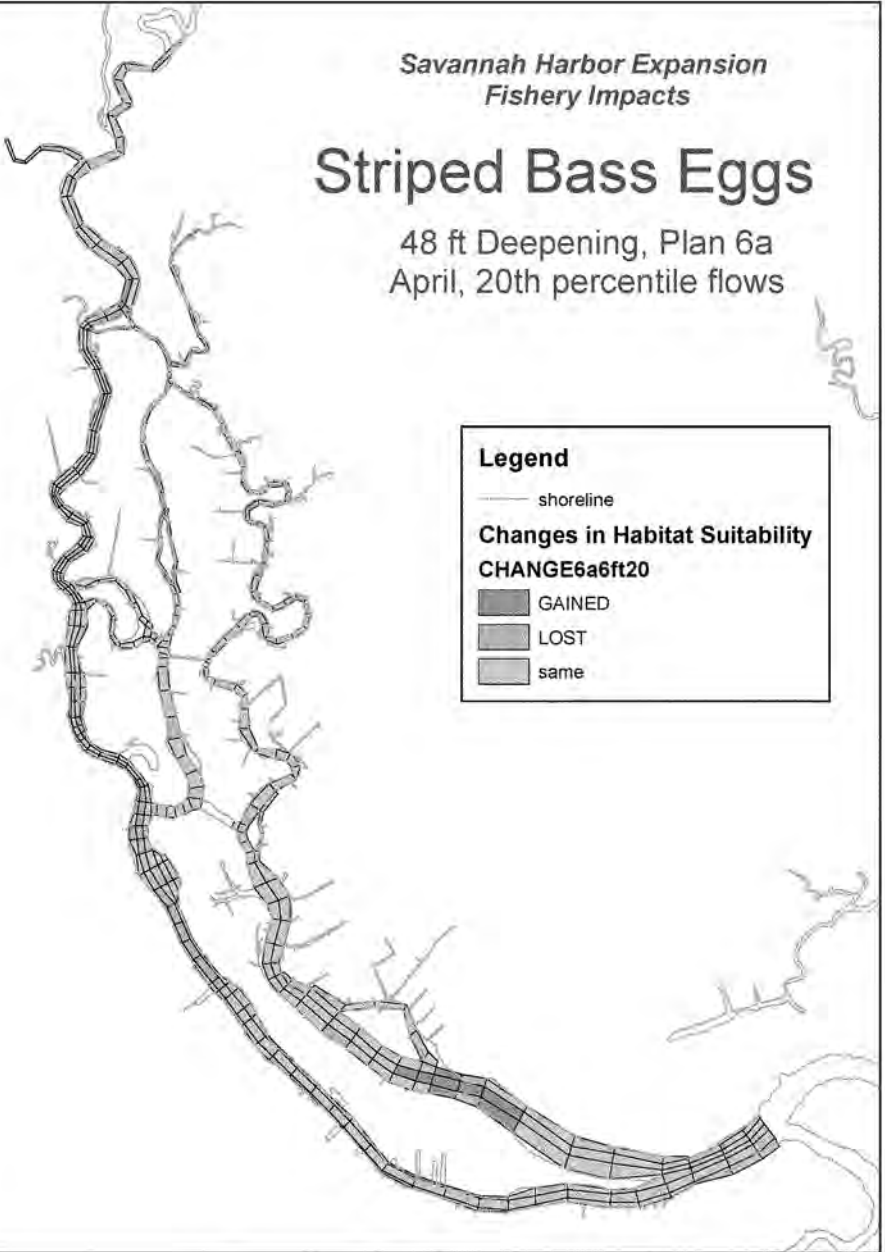
### Changes in Habitat Suitability

**CHANGE6a6ft20**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

48 ft Deepening, Plan 6a  
April, 50th percentile flows

**Legend**

— shoreline

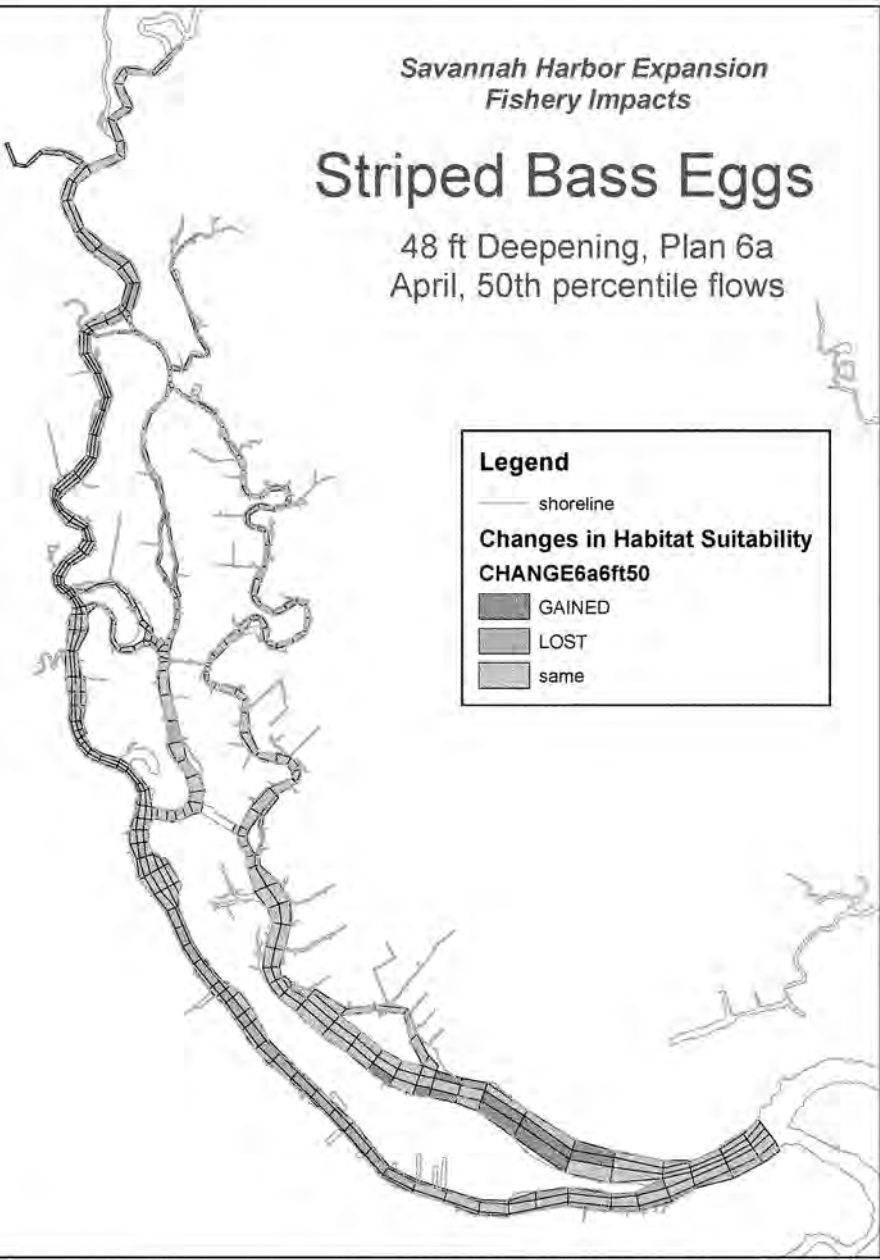
**Changes in Habitat Suitability**

**CHANGE6a6ft50**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Eggs

48 ft Deepening, Plan 6a  
April, 80th percentile flows

## Legend

— shoreline

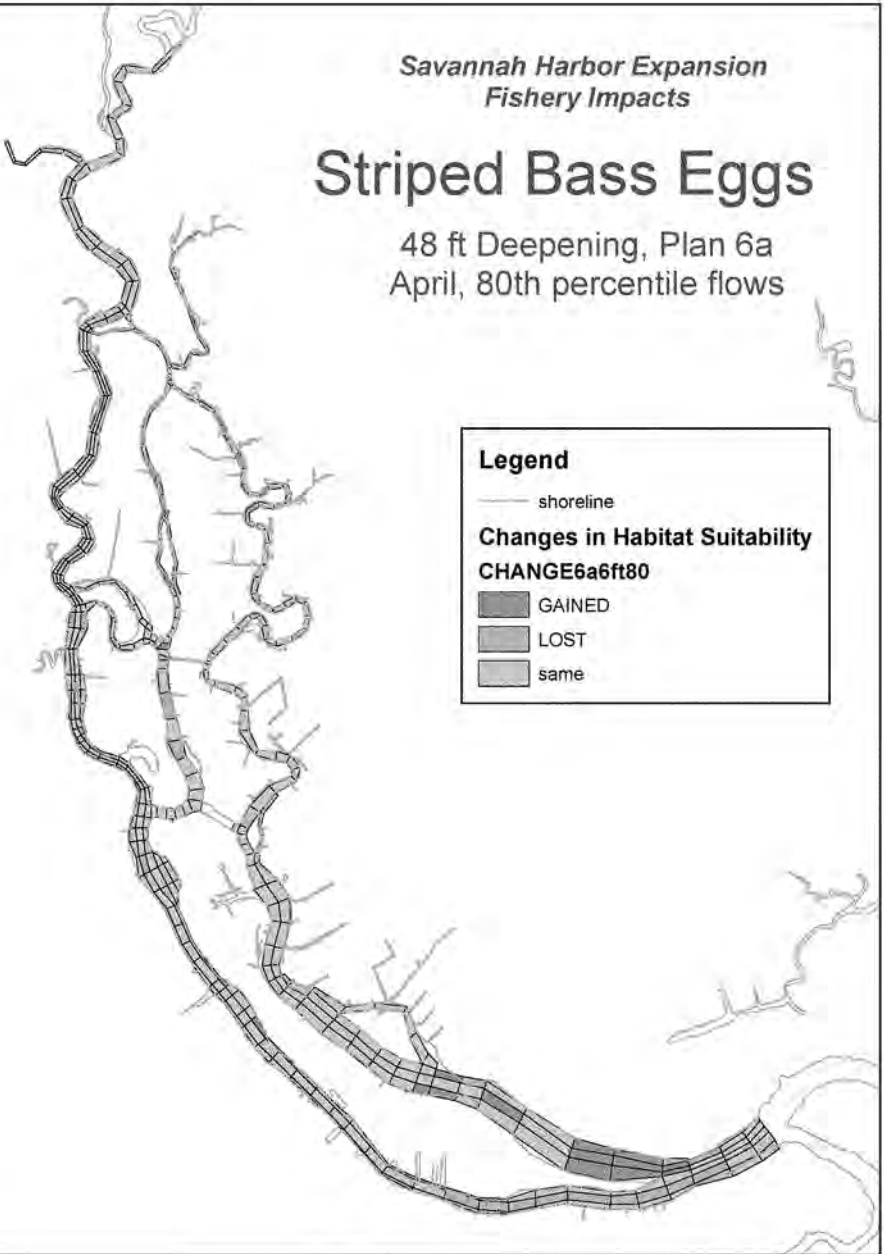
### Changes in Habitat Suitability

**CHANGE6a6ft80**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

48 ft Deepening, Plan 6a  
May, 20th percentile flows

## Legend

— shoreline

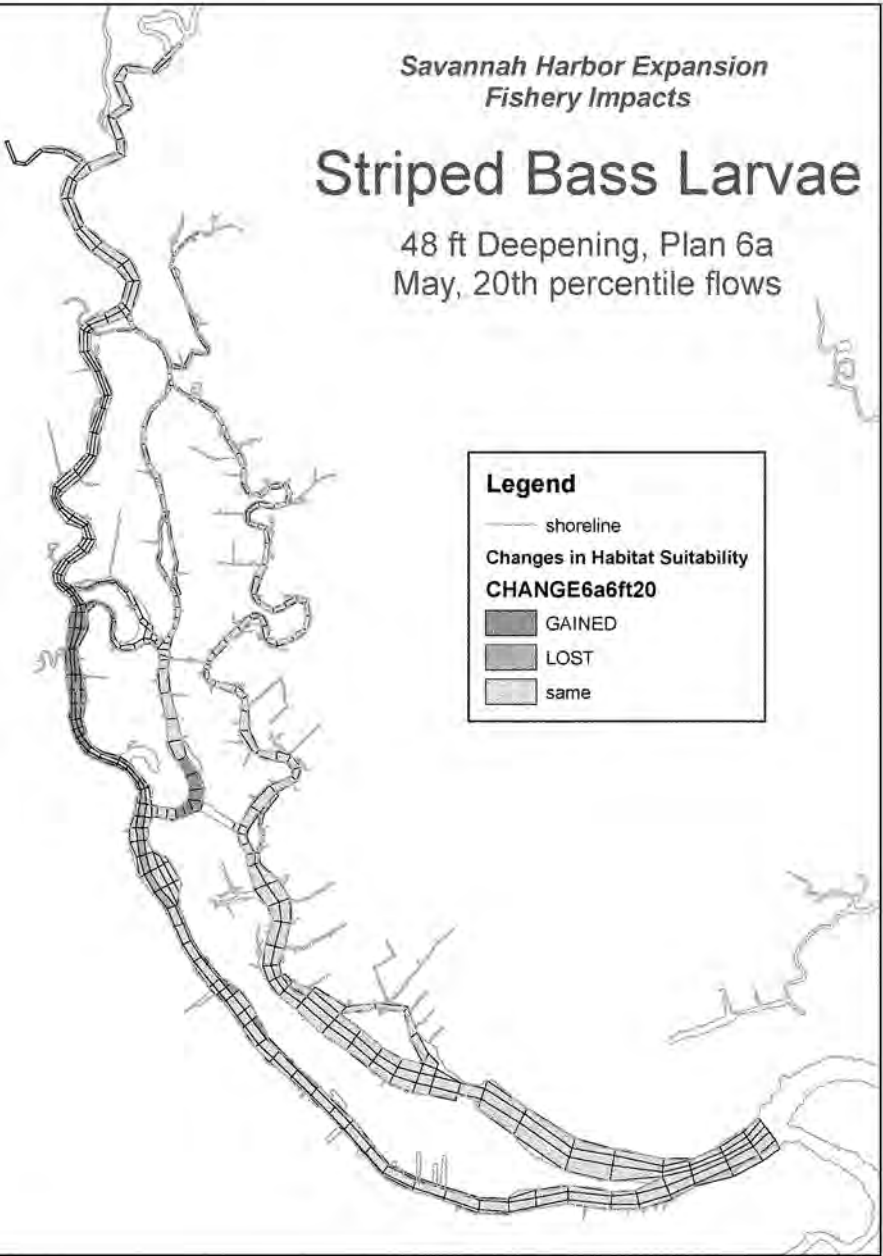
Changes in Habitat Suitability

**CHANGE6a6ft20**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

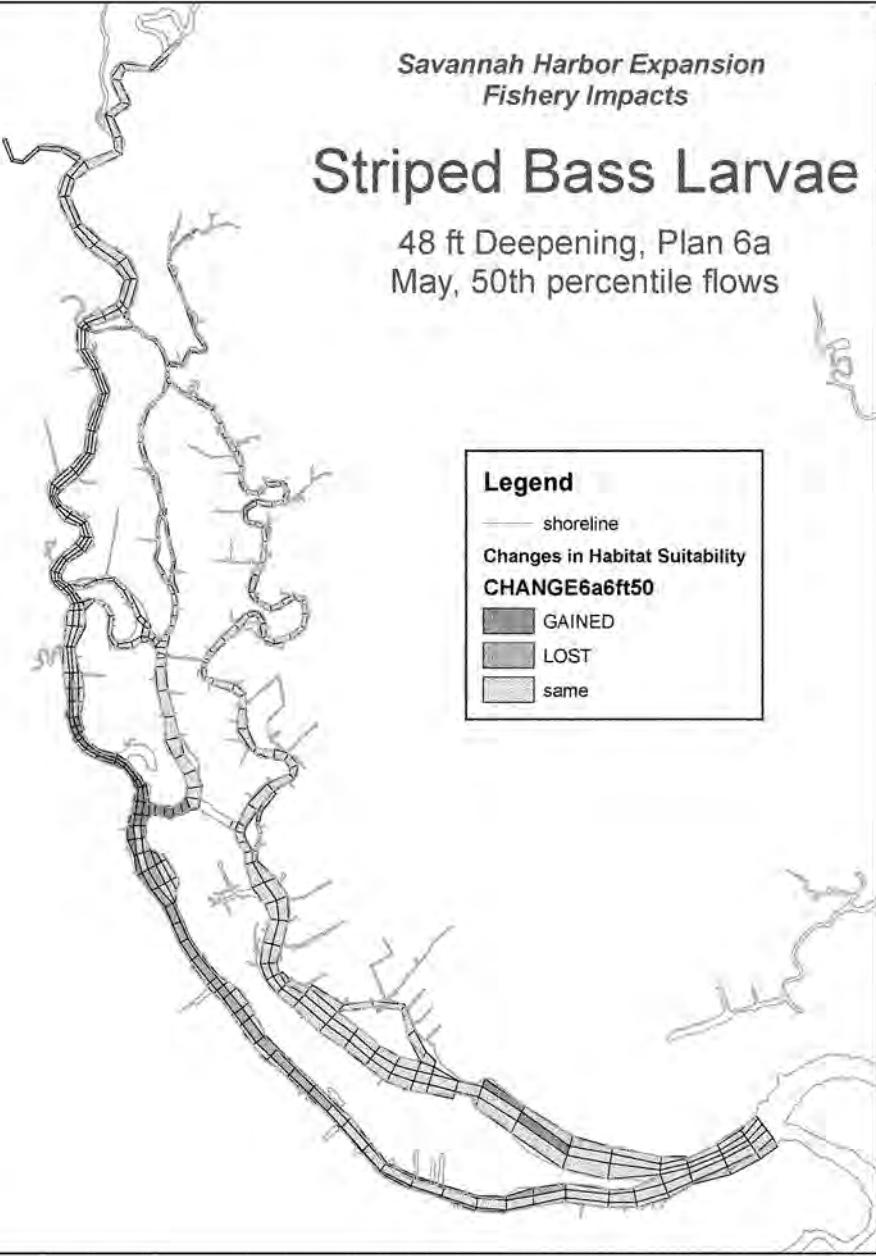
48 ft Deepening, Plan 6a  
May, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a6ft50**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |





*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Larvae

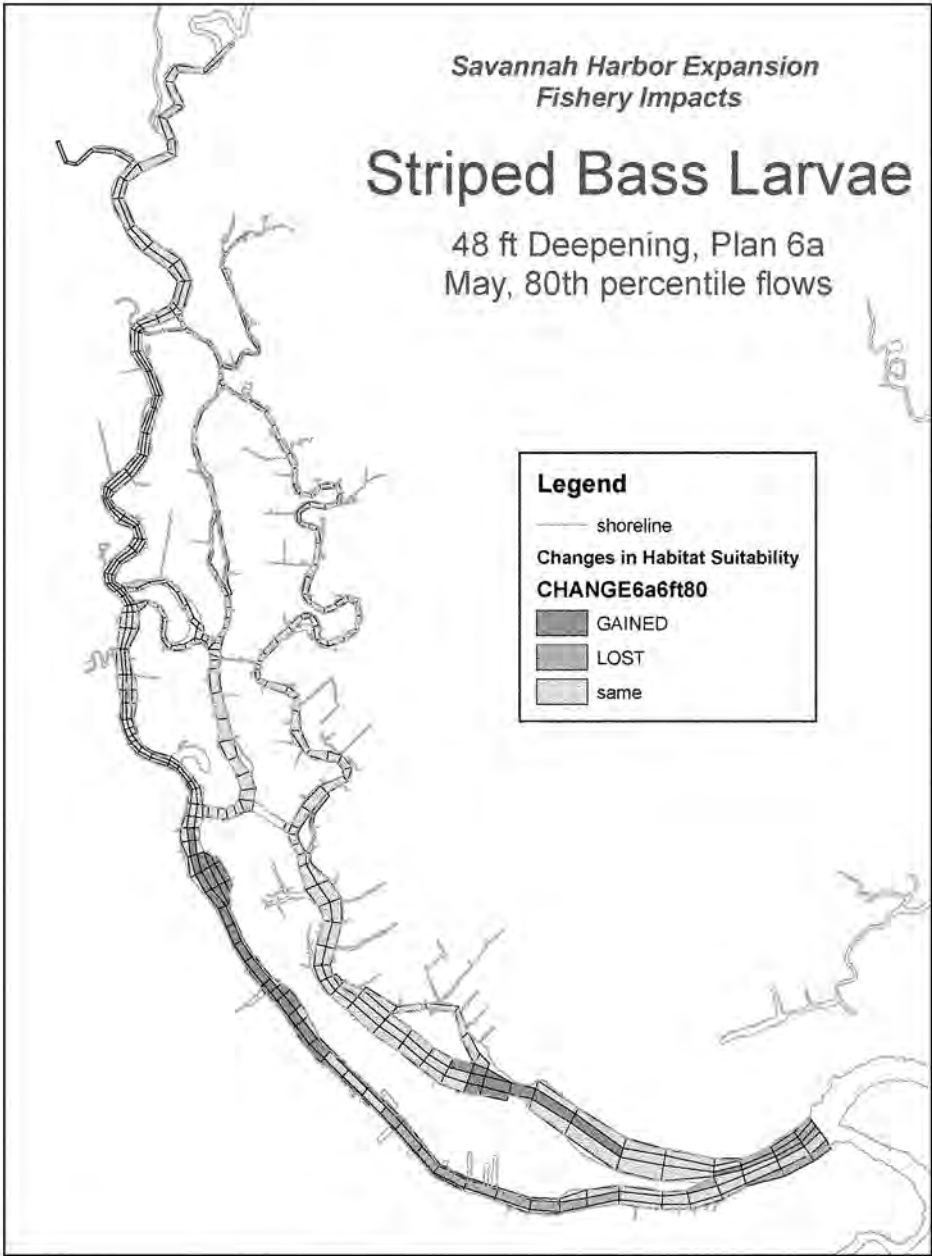
48 ft Deepening, Plan 6a  
May, 80th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a6ft80**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

48 ft Deepening, Plan 6a  
April, 20th percentile flows

## Legend

— shoreline

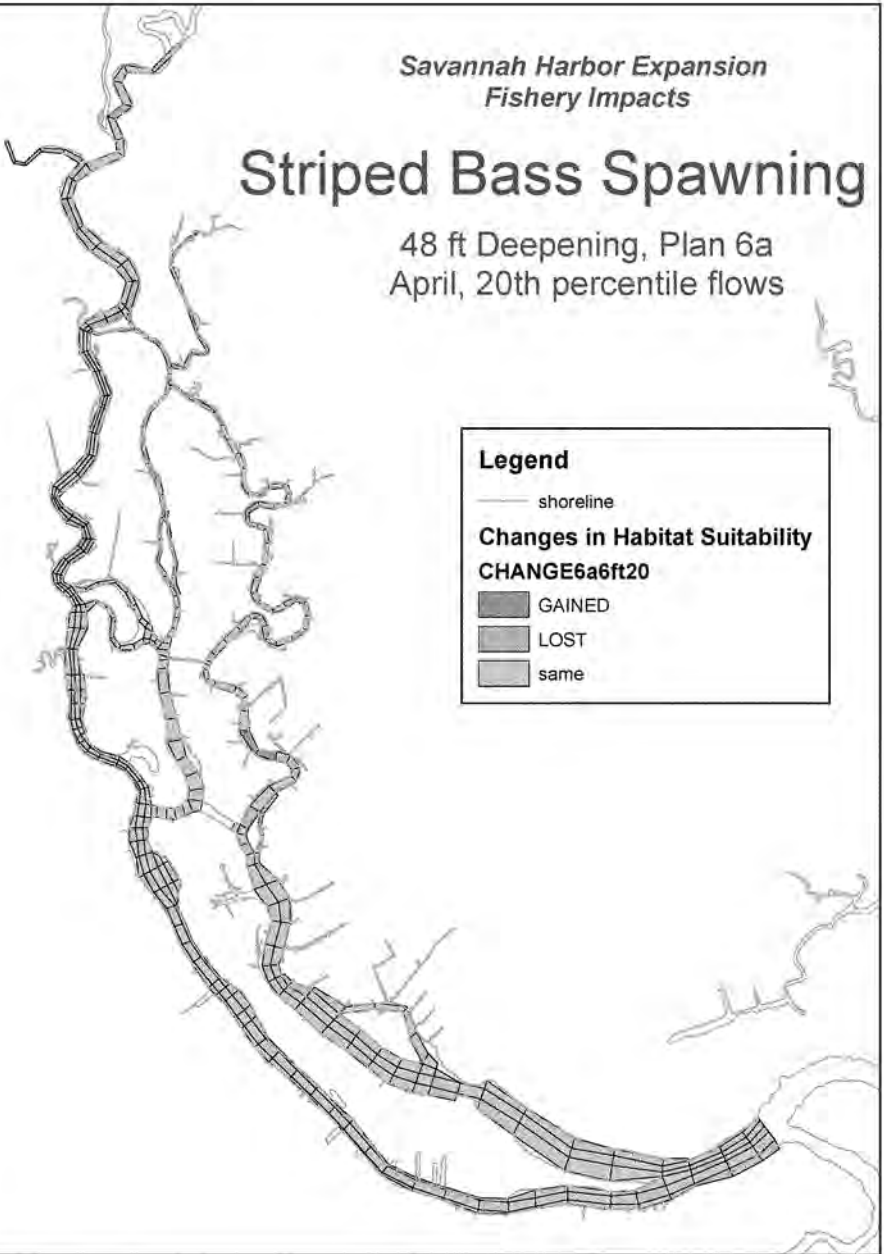
### Changes in Habitat Suitability

**CHANGE6a6ft20**

■ GAINED

■ LOST

■ same



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

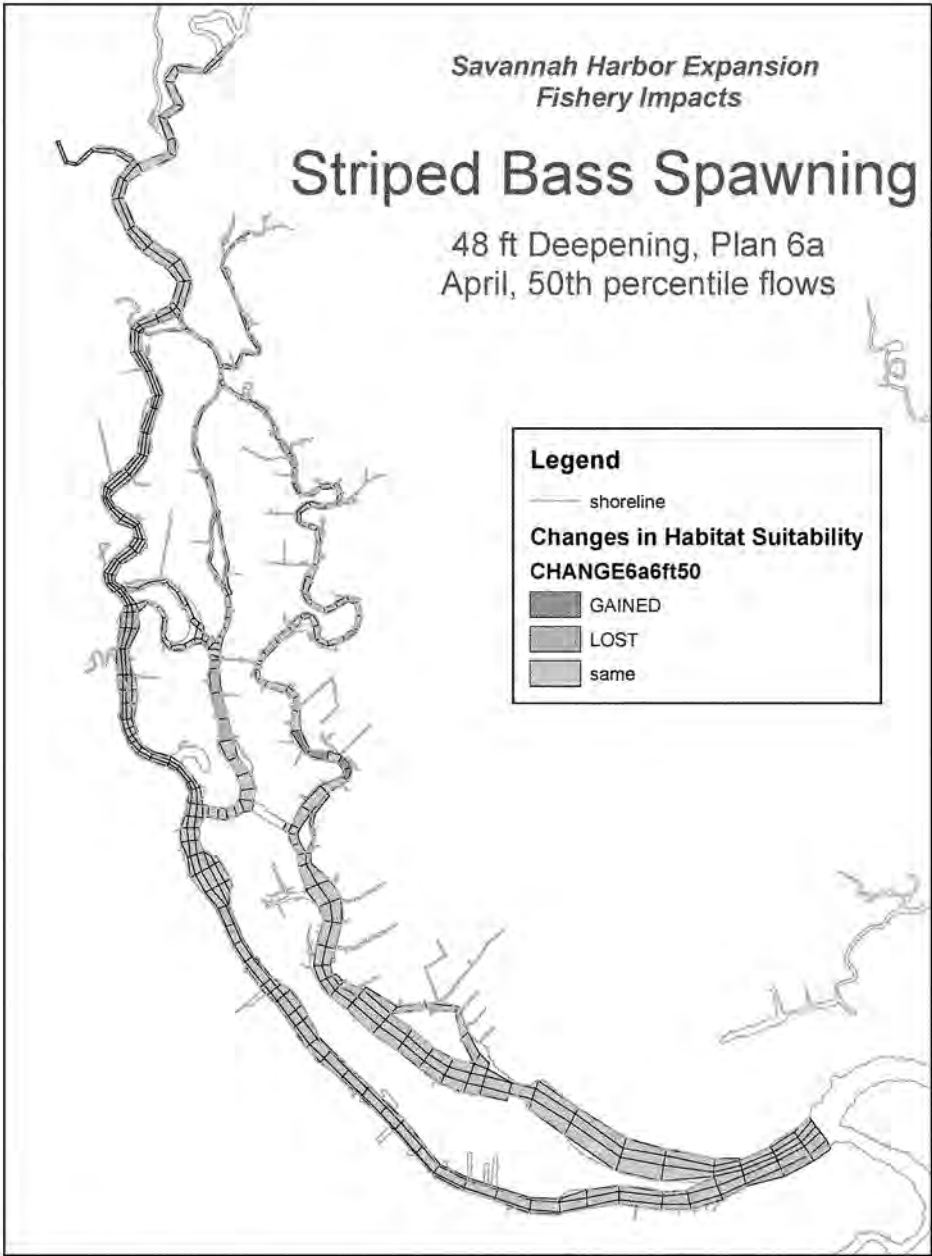
48 ft Deepening, Plan 6a  
April, 50th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a6ft50**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Striped Bass Spawning

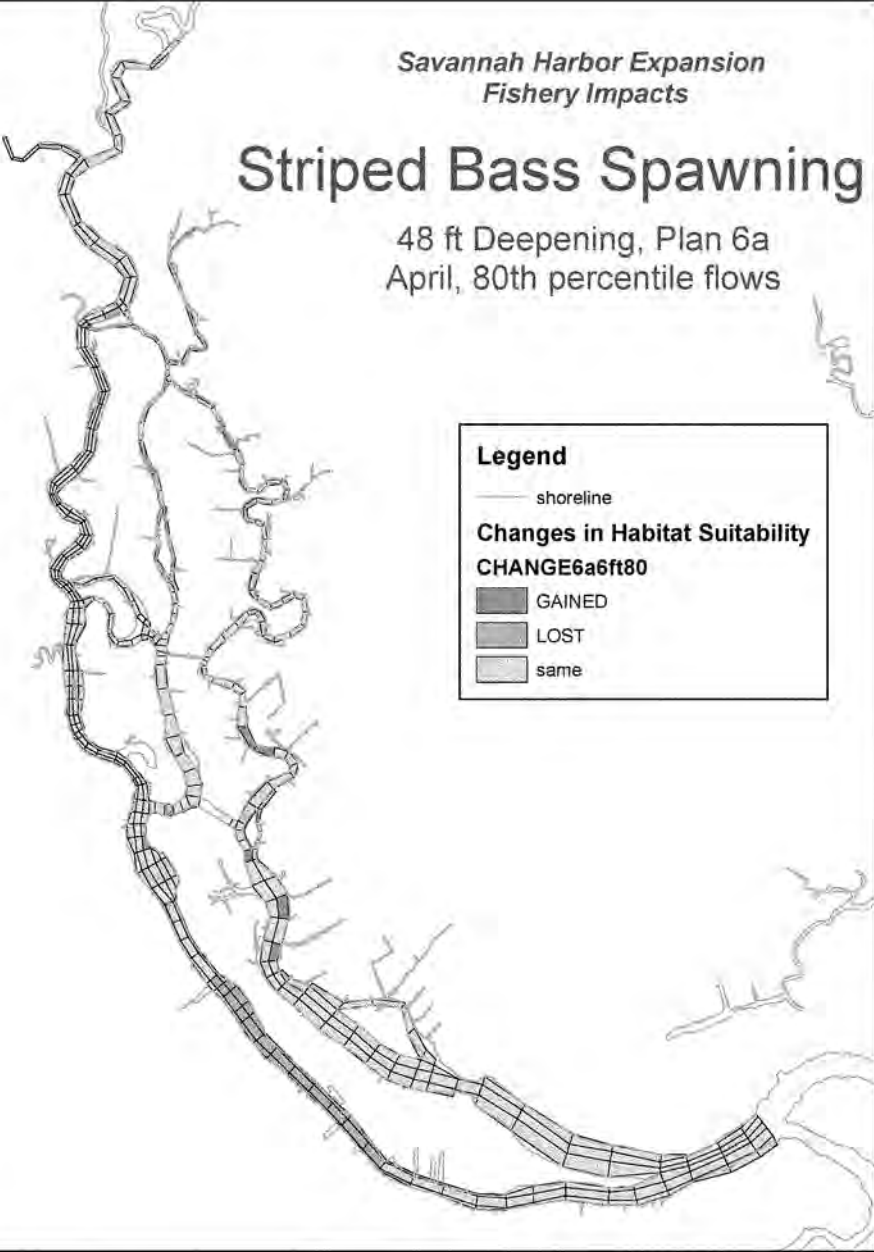
48 ft Deepening, Plan 6a  
April, 80th percentile flows

**Legend**

— shoreline

**Changes in Habitat Suitability**  
**CHANGE6a6ft80**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Juveniles

48 ft Deepening, Plan 6a  
January, 50th percentile flows

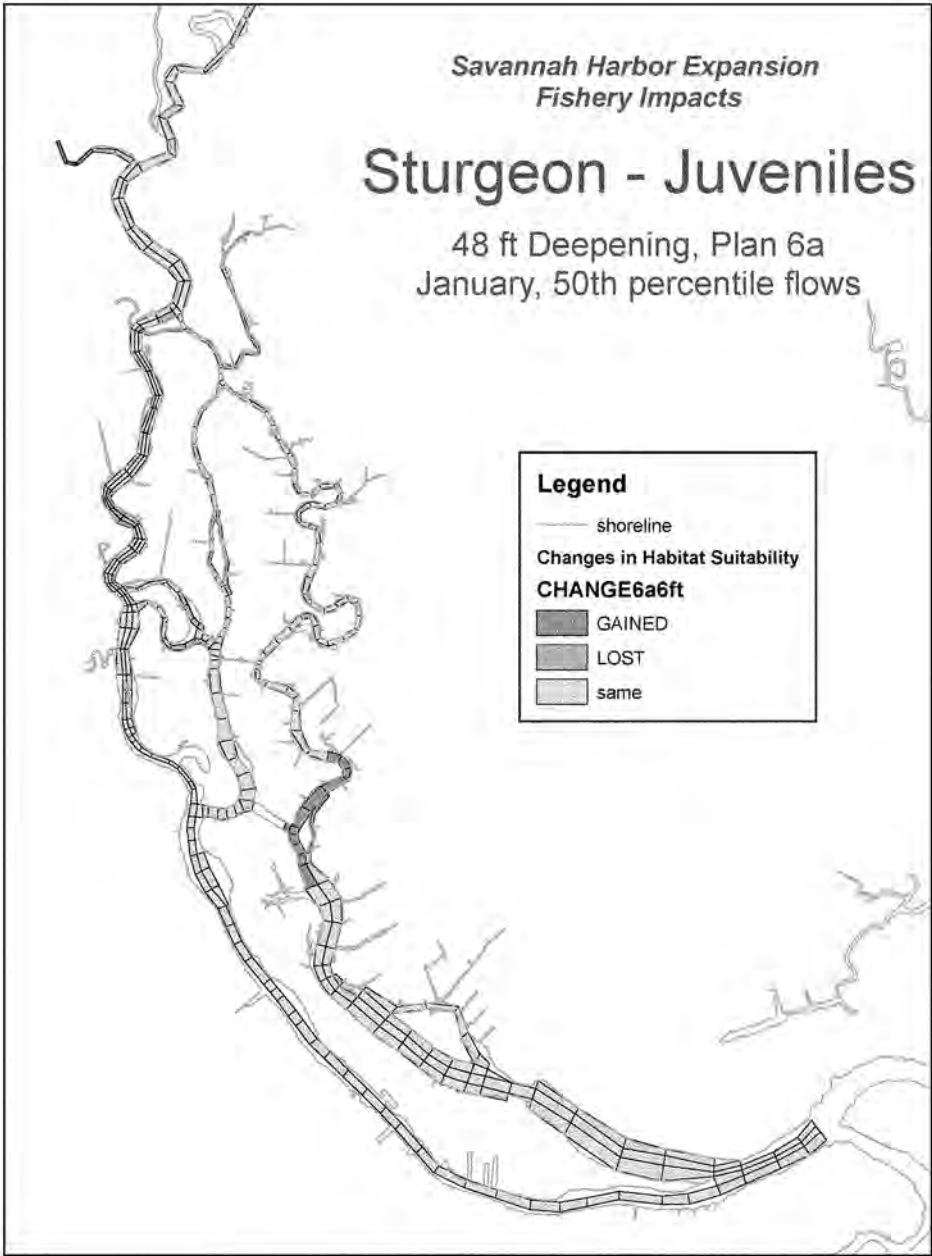
**Legend**

— shoreline

**Changes in Habitat Suitability**

**CHANGE6a6ft**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
|  | GAINED |
|  | LOST   |
|  | same   |



*Savannah Harbor Expansion  
Fishery Impacts*

# Sturgeon - Adults

48 ft Deepening, Plan 6a  
January, 50th percentile flows

**Legend**

— shoreline

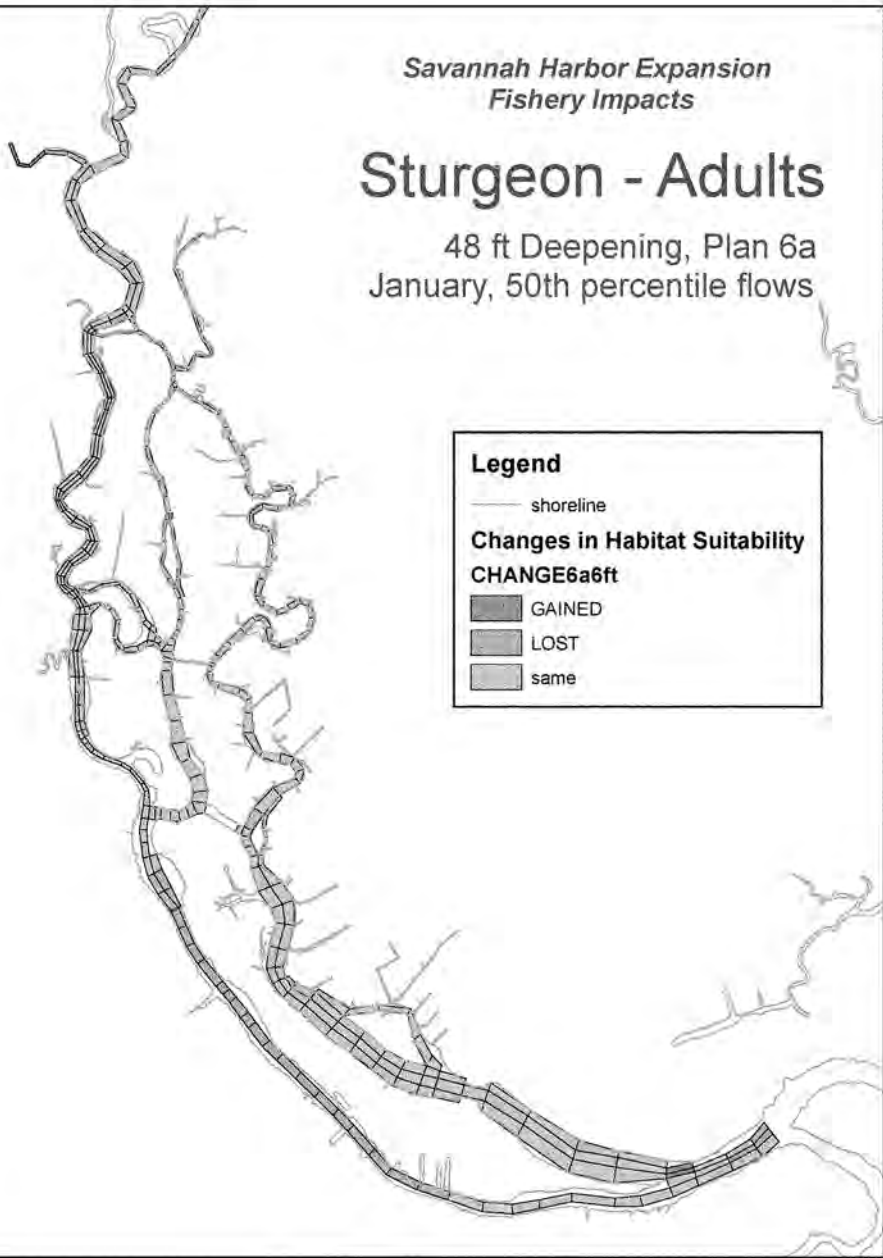
**Changes in Habitat Suitability**

**CHANGE6a6ft**

■ GAINED

■ LOST

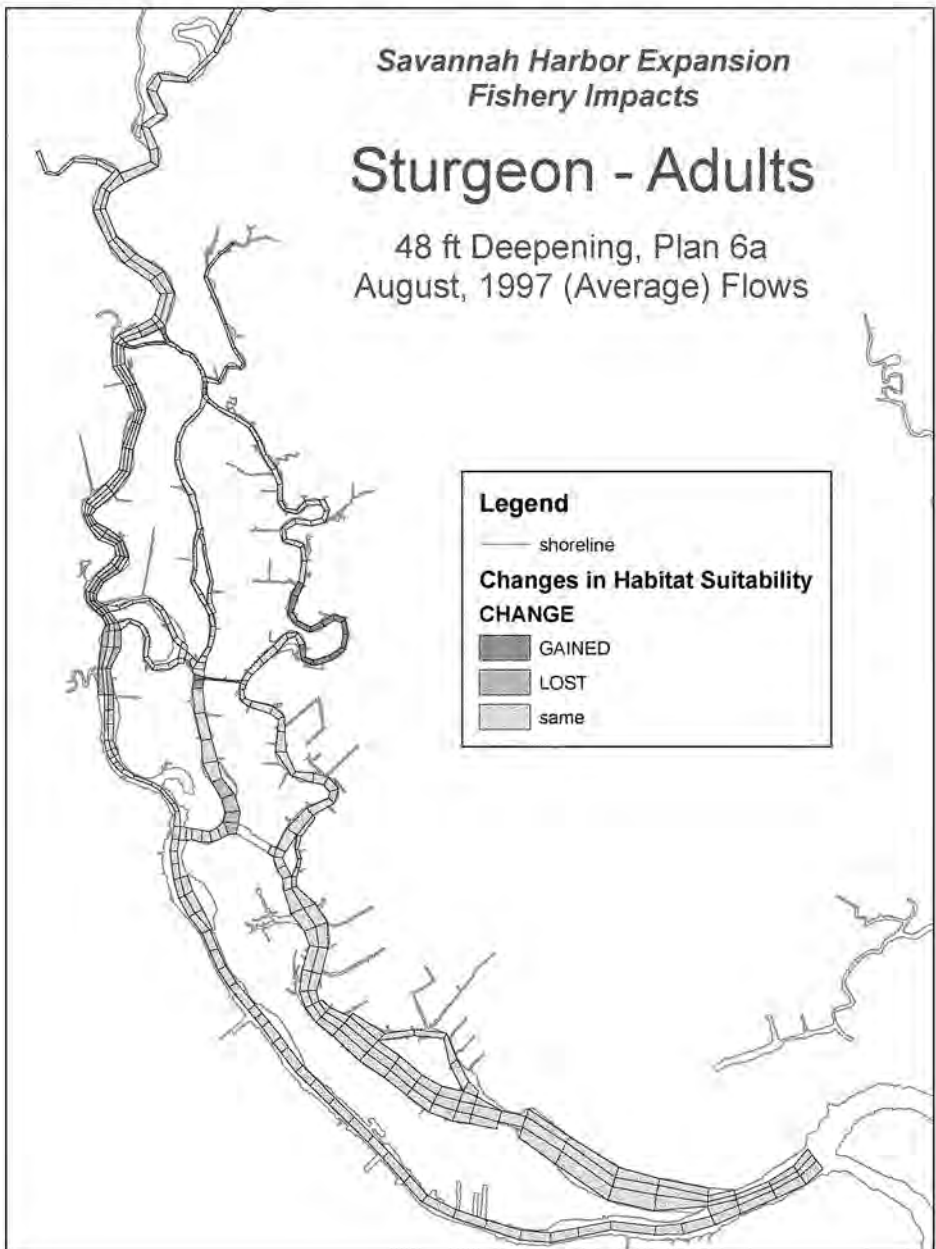
■ same



*Savannah Harbor Expansion  
Fishery Impacts*

## Sturgeon - Adults

48 ft Deepening, Plan 6a  
August, 1997 (Average) Flows



*Savannah Harbor Expansion  
Fishery Impacts*

## Southern Flounder

48 ft Deepening, Plan 6a  
August, 1997 (Average) Flows

### Legend

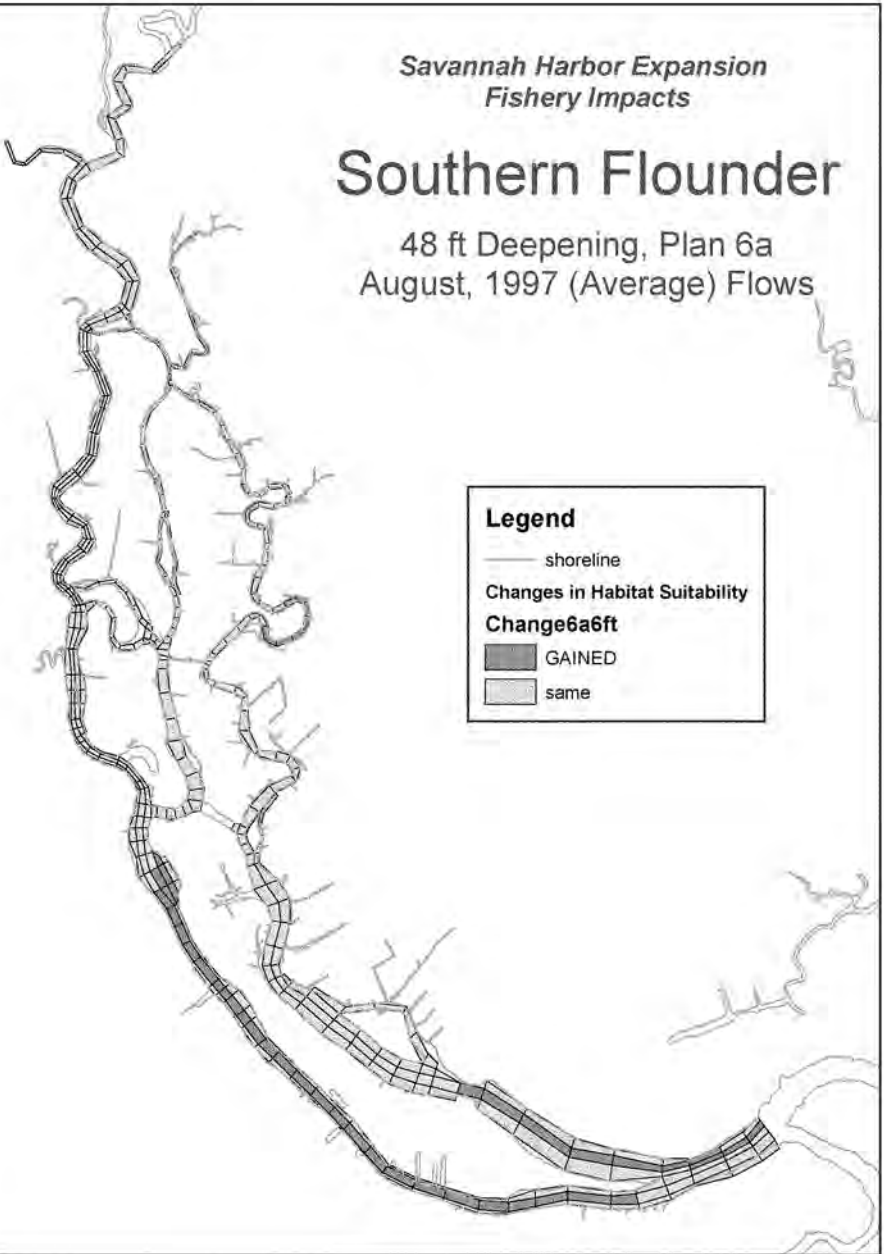
— shoreline

Changes in Habitat Suitability

**Change6a6ft**

■ GAINED

□ same



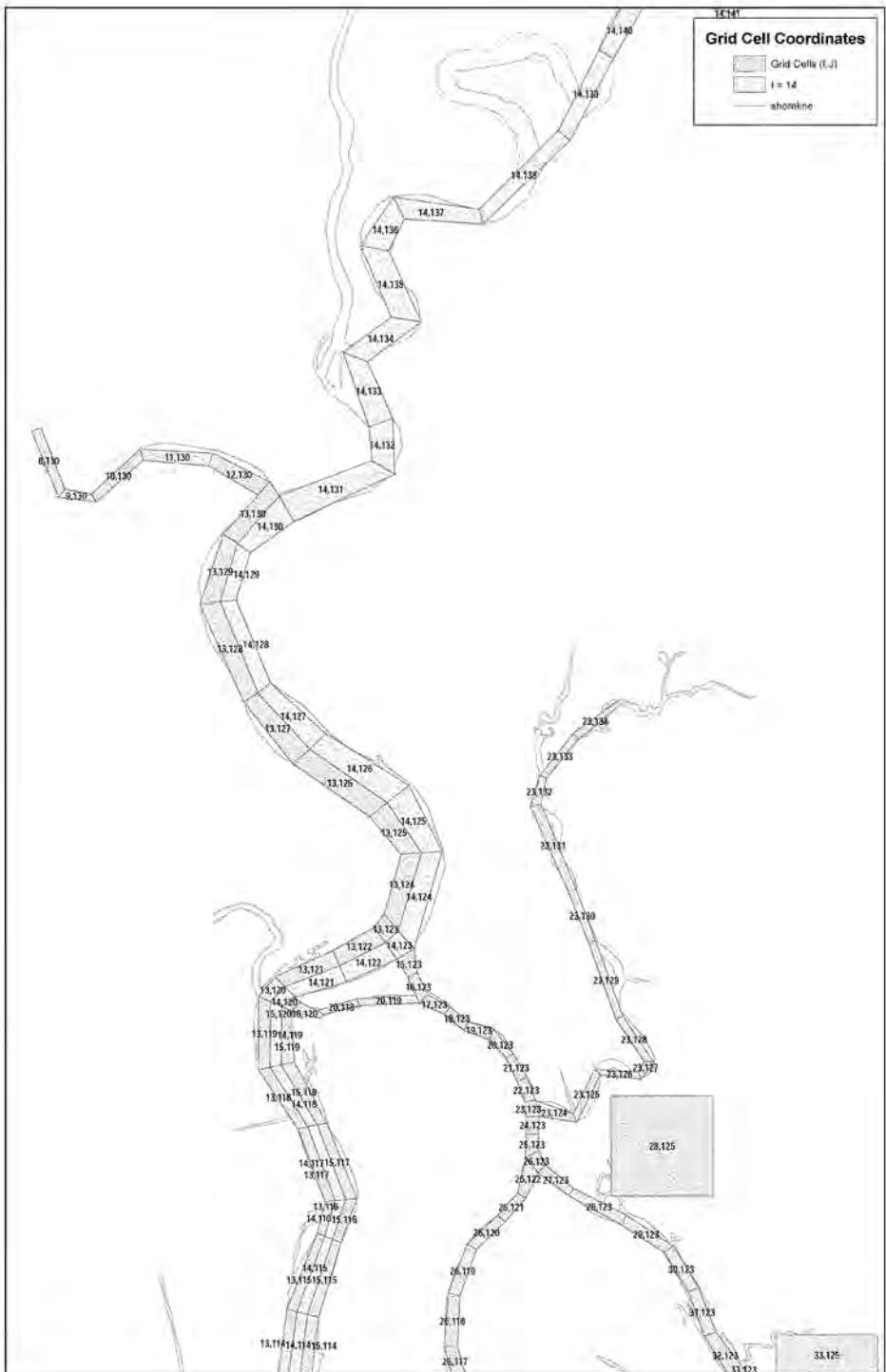


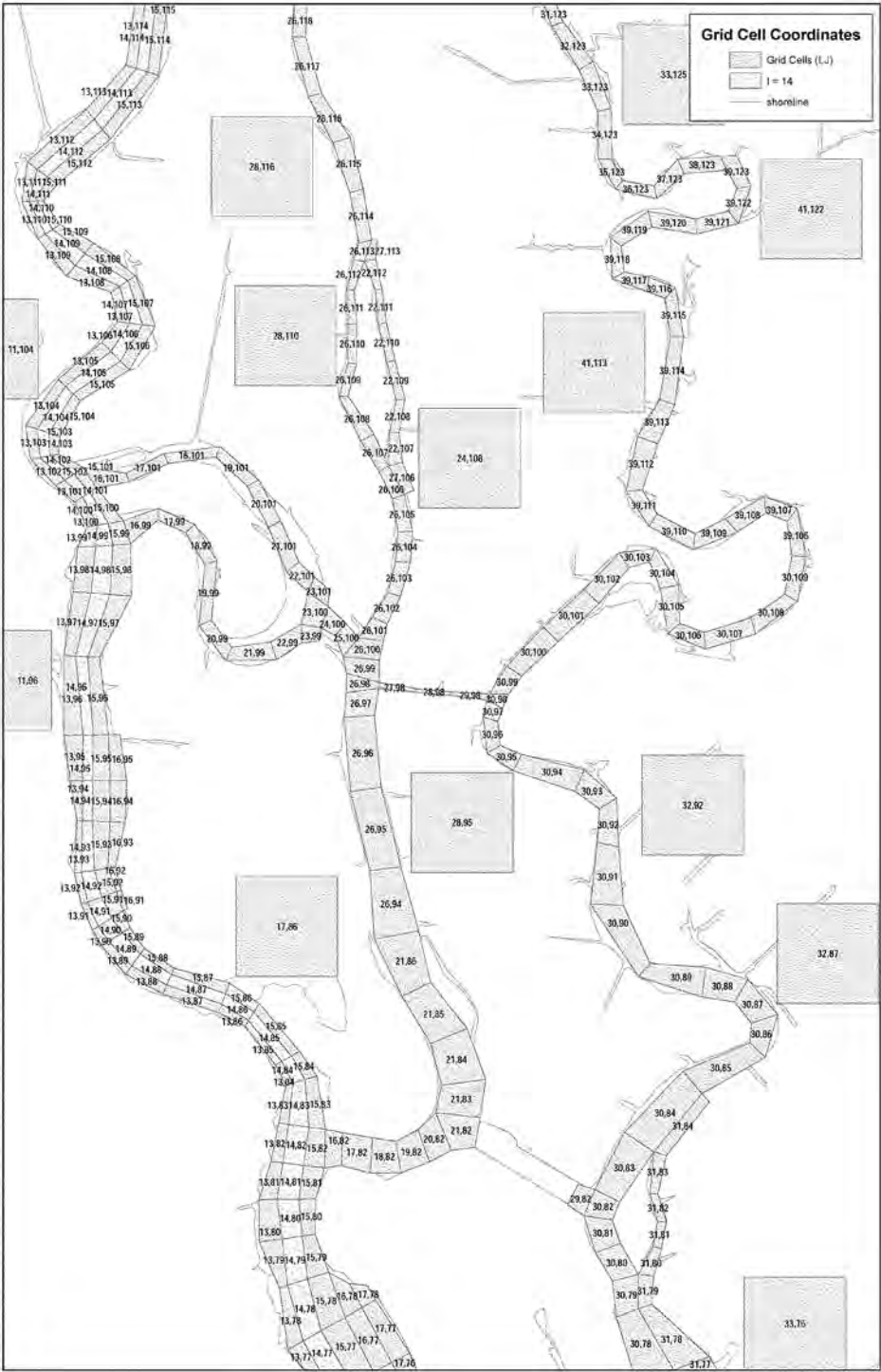
# **Appendix B**

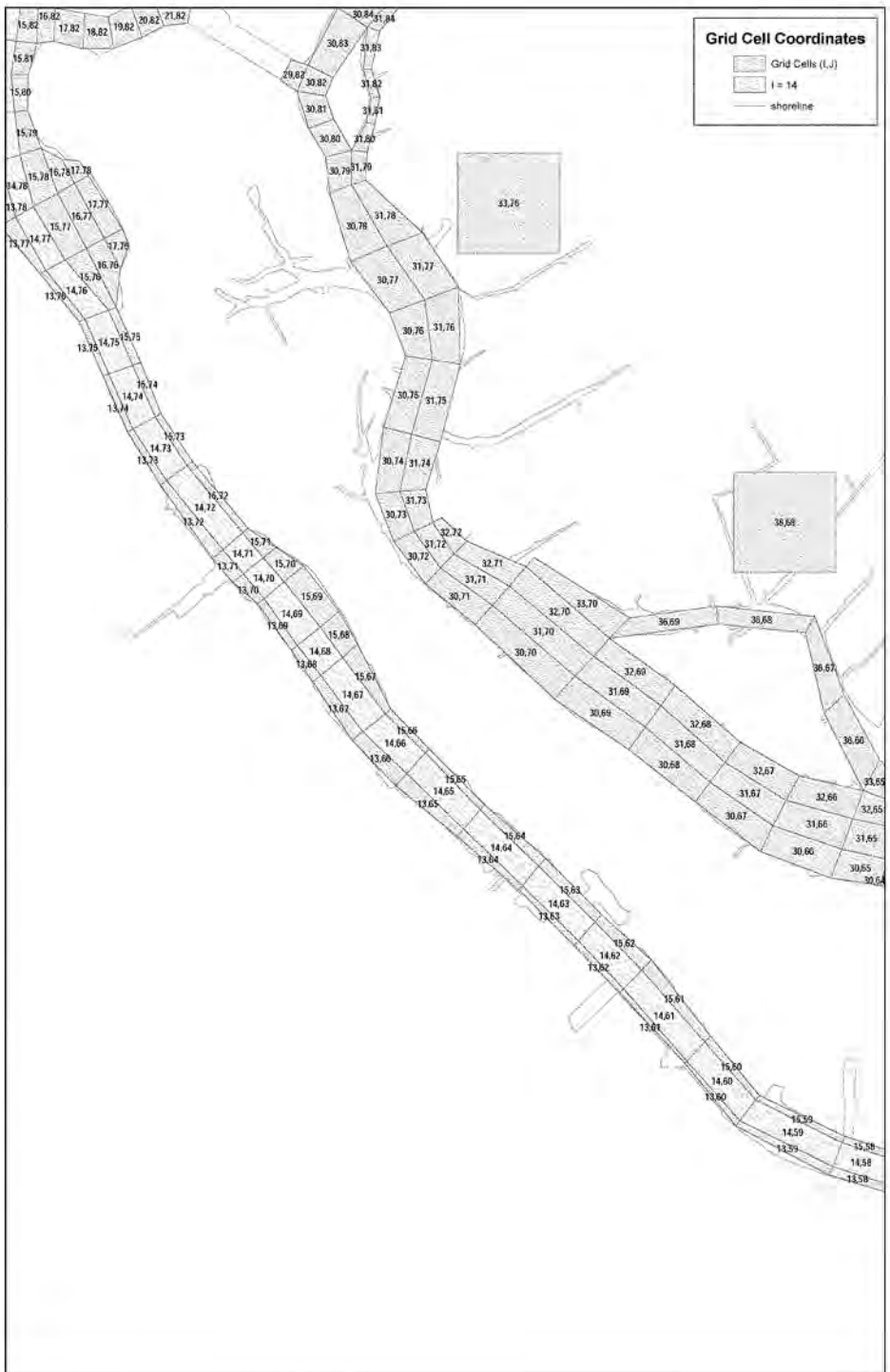
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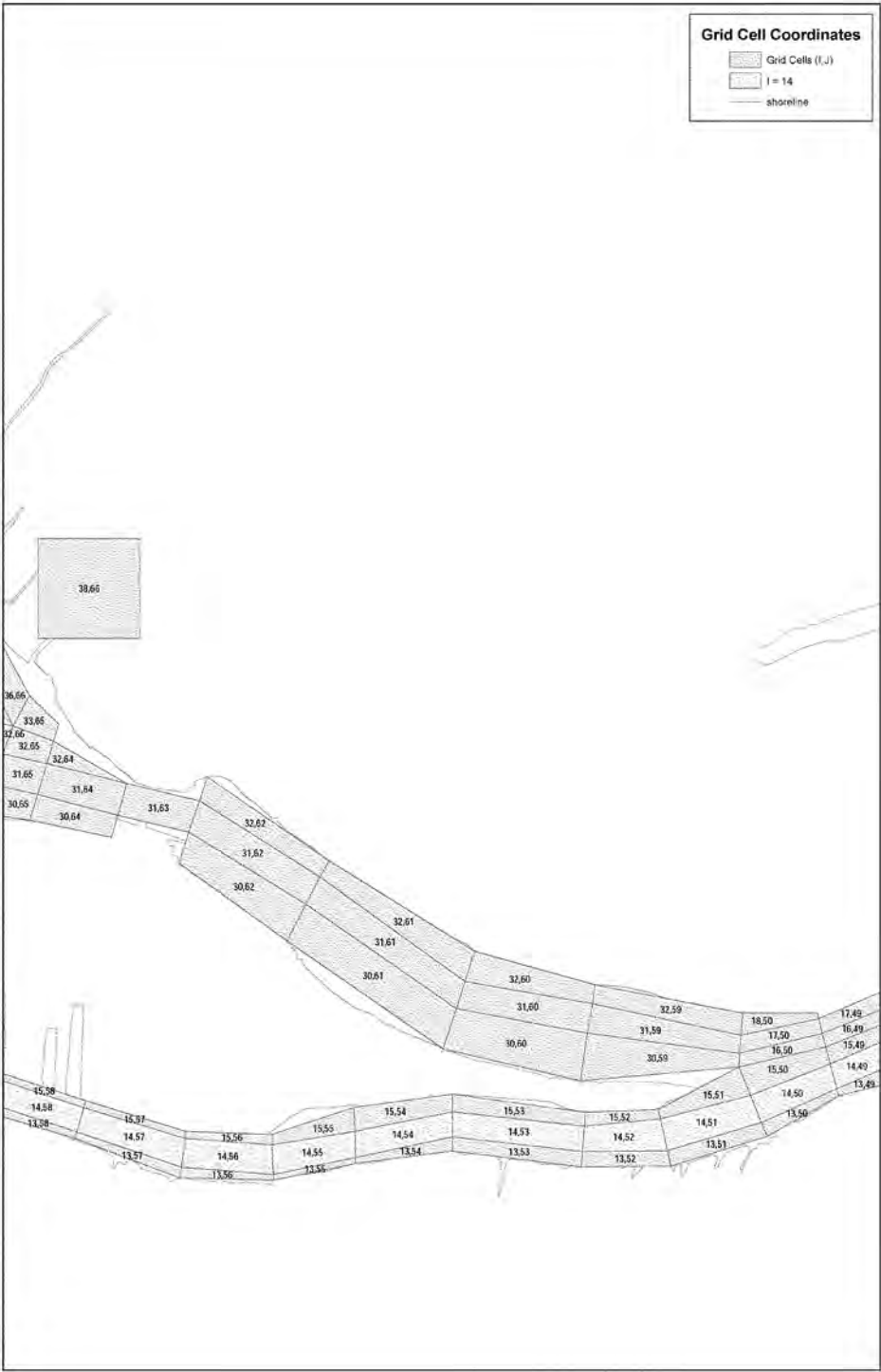
## **Habitat Suitability Tables**

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**American Shad**  
**20th percentile MAY flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 50% exceedance (10th percentile)

| I J   | Existing Conditions<br>DO6a120 | Plan16b. 4.4 ft Depth<br>DO6a120 CHANGE6a120 | Plan09. 4.5 ft Depth<br>DO6a120 CHANGE6a120 | Plan6a. 4.6 ft Depth<br>DO6a120 CHANGE6a120 | Plan6a. 4.7 ft Depth<br>DO6a120 CHANGE6a120 | Plan6a. 4.8 ft Depth<br>DO6a120 CHANGE6a120 |
|-------|--------------------------------|----------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| 13.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 14.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 15.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 16.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 17.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 18.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 19.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 20.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 21.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 22.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 23.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 24.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 25.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 26.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 27.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 28.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 29.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 30.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 31.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 32.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 33.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 34.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 35.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 36.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 37.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 38.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 39.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 40.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 41.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 42.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 43.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 44.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 45.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 46.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 47.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 48.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 49.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 50.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 51.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 52.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 53.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 54.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 55.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 56.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 57.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 58.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 59.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |
| 60.47 | Pass                           | Pass                                         | Pass                                        | Pass                                        | Pass                                        | Pass                                        |

**American Shad**  
20th percentile MAY flows

Suitable habitat when

D.O.  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan 6b, 44 ft Depth |               | Plan 6b, 45 ft Depth |               | Plan 6b, 46 ft Depth |               | Plan 6b, 47 ft Depth |               | Plan 6b, 48 ft Depth |               |
|---------------------|------|----------------------|---------------|----------------------|---------------|----------------------|---------------|----------------------|---------------|----------------------|---------------|
| DO#020              |      | DO6b44f20            | CHANGE6b44f20 | DO6b45f20            | CHANGE6b45f20 | DO6b46f20            | CHANGE6b46f20 | DO6b47f20            | CHANGE6b47f20 | DO6b48f20            | CHANGE6b48f20 |
| 15.58               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.59               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14.59               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.59               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 20.69               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.59               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32.59               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.60               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14.60               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.60               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30.60               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.60               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32.60               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.61               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14.61               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.61               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30.61               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.61               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32.61               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.62               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14.62               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.62               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30.62               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.62               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32.62               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.63               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14.63               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.63               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30.63               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.63               | Pass | Fail                 | FailtoPass    | Pass                 | FailtoPass    | Pass                 | FailtoPass    | Pass                 | FailtoPass    | Pass                 | FailtoPass    |
| 32.63               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.64               | Pass | Fail                 | FailtoPass    | Pass                 | FailtoPass    | Pass                 | FailtoPass    | Pass                 | FailtoPass    | Pass                 | FailtoPass    |
| 14.64               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.64               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30.64               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.64               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32.64               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 33.65               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |

**American Shad**  
**20th percentile MAY flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I, J  | Existing Conditions<br>D06a20 | Plan16b, 44 ft Depth<br>D06a44ft20 | CHANGE6b20 | Plan16a, 45 ft Depth<br>D06a45ft20 | CHANGE6a30 | Plan16a, 46 ft Depth<br>D06a46ft20 | CHANGE6a40 | Plan16a, 47 ft Depth<br>D06a47ft20 | CHANGE6a50 | Plan16a, 48 ft Depth<br>D06a48ft20 | CHANGE6a60 |
|-------|-------------------------------|------------------------------------|------------|------------------------------------|------------|------------------------------------|------------|------------------------------------|------------|------------------------------------|------------|
| 13 06 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 06 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 06 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 30 00 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 31 06 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 32 06 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 33 06 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 13 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 30 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 31 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 32 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 33 07 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 13 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 30 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 31 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 32 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 33 08 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 13 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 30 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 31 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 32 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 33 09 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 13 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 30 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 31 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 32 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 33 70 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 13 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 30 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 31 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 32 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 33 71 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 14 72 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |
| 15 72 | Pass                          | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       | Pass                               | same       |



**American Shad**  
20th percentile MAY flows

Suitable habitat when

D.O.  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan 6b, 44 ft Depth |               | Plan 6a, 45 ft Depth |               | Plan 6a, 46 ft Depth |               | Plan 6a, 47 ft Depth |               | Plan 6a, 48 ft Depth |               |
|---------------------|------|----------------------|---------------|----------------------|---------------|----------------------|---------------|----------------------|---------------|----------------------|---------------|
| DOW20               |      | D06a2f120            | CHANGE6a2f120 | D06a3f120            | CHANGE6a3f120 | D06a4f120            | CHANGE6a4f120 | D06a5f120            | CHANGE6a5f120 | D06a6f120            | CHANGE6a6f120 |
| 30 72               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 72               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 32 72               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 73               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 73               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 20 73               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 73               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13 74               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 74               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 74               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30 74               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 74               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13 75               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 75               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 75               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30 75               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 75               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 16 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 17 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 76               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 16 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 17 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 77               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 16 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 17 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 78               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 13 79               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 14 79               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 15 79               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 30 79               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |
| 31 79               | Pass | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          | Pass                 | same          |



**American Shad**  
20th percentile MAY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan 66, 44 ft Depth |                | Plan 66, 45 ft Depth |                | Plan 66, 46 ft Depth |                | Plan 66, 47 ft Depth |                | Plan 66, 48 ft Depth |                |
|---------------------|------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|
| DOW20               |      | D06a2f120            | CHANGE60a2f120 | D06a3f120            | CHANGE60a3f120 | D06a4f120            | CHANGE60a4f120 | D06a5f120            | CHANGE60a5f120 | D06a6f120            | CHANGE60a6f120 |
| 13 87               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 87               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 87               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 30 87               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 86               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 86               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 86               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 20 86               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 89               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 89               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 89               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 30 89               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 90               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 90               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 90               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 20 90               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 91               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 91               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 91               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 30 91               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 92               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 92               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 92               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 20 92               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 93               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 93               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 93               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 20 93               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 94               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 94               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 94               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 20 94               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 95               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 14 95               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 15 95               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 20 95               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 30 95               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |
| 13 96               | Pass | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           | Pass                 | same           |

**American Shad**  
20th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions | Planf6b_44 ft Depth | Planf6a_45 ft Depth | Planf6a_46 ft Depth | Planf6a_47 ft Depth | Planf6a_48 ft Depth |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 1 J                 | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 96               | Pass                | same                | same                | same                | same                |
| 15 96               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20 96               | Pass                | same                | same                | same                | same                |
| 30 96               | Pass                | same                | same                | same                | same                |
| 13 97               | Pass                | same                | same                | same                | same                |
| 14 97               | Pass                | same                | same                | same                | same                |
| 15 97               | Pass                | same                | same                | same                | same                |
| 20 97               | Pass                | same                | same                | same                | same                |
| 30 97               | Pass                | same                | same                | same                | same                |
| 13 98               | Pass                | same                | same                | same                | same                |
| 14 98               | Pass                | same                | same                | same                | same                |
| 15 98               | Pass                | same                | same                | same                | same                |
| 20 98               | Pass                | same                | same                | same                | same                |
| 30 98               | Pass                | same                | same                | same                | same                |
| 27 99               | Pass                | same                | same                | same                | same                |
| 28 99               | Fail                | Pass to Fail        | Fail                | Fail                | Pass to Fail        |
| 29 99               | Pass                | same                | same                | same                | same                |
| 30 99               | Pass                | same                | same                | same                | same                |
| 13 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 18 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 19 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 21 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 22 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 24 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 25 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 26 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 27 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 28 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 29 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 30 99               | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 18 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 19 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 21 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 22 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 24 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 25 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 26 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 27 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 28 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 29 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 30 100              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 18 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 19 101              | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20 101              | Pass                | Pass                | Pass                | Pass                | Pass                |

**American Shad**  
20th percentile MAY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | PlanFeb. 44 ft Depth  | PlanFeb. 45 ft Depth   | PlanFeb. 46 ft Depth   | PlanFeb. 47 ft Depth   | PlanFeb. 48 ft Depth   |
|---------------------|------|-----------------------|------------------------|------------------------|------------------------|------------------------|
| D06a20              |      | D06a2f120 CHANGEa2020 | D06a3f120 CHANGEa3f120 | D06a4f120 CHANGEa4f120 | D06a5f120 CHANGEa5f120 | D06a6f120 CHANGEa6f120 |
| 19 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 20 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 21 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 22 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 23 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 24 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 25 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 26 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 27 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 28 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 29 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 30 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 31 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 32 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 33 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 34 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 35 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 36 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 37 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 38 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 39 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 40 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 41 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 42 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 43 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 44 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 45 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 46 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 47 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 48 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 49 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 50 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 51 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 52 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 53 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 54 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 55 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 56 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 57 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 58 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 59 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 60 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 61 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 62 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 63 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 64 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 65 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 66 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 67 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 68 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 69 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 70 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 71 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 72 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 73 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 74 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 75 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 76 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 77 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 78 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 79 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 80 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 81 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 82 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 83 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 84 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 85 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 86 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 87 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 88 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 89 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 90 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 91 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 92 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 93 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 94 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 95 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 96 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 97 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 98 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 99 101              | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |
| 100 101             | Pass | Pass                  | Pass                   | Pass                   | Pass                   | Pass                   |



**American Shad**  
20th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Planted, 44 ft Depth |      | Planted, 45 ft Depth |      | Planted, 46 ft Depth |      | Planted, 47 ft Depth |      | Planted, 48 ft Depth |      |
|---------------------|------|----------------------|------|----------------------|------|----------------------|------|----------------------|------|----------------------|------|
| DO#0420             |      | DO#0420 CHANG#0420   |      | DO#0420 CHANG#0420   |      | DO#0420 CHANG#0420   |      | DO#0420 CHANG#0420   |      | DO#0420 CHANG#0420   |      |
| 39 115              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 116              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 116              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 116              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 116              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 116              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 117              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 117              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 117              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 117              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 117              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 118              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 118              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 118              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 118              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 118              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 119              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 119              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 119              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 119              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 119              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 120              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 120              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 120              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 120              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 120              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 121              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 121              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 121              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 121              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 121              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 122              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 122              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 122              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 122              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 122              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 123              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 123              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 123              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 123              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 123              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 13 124              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 14 124              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 15 124              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 26 124              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |
| 39 124              | Pass | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same | Pass                 | same |



**American Shad**  
**20th percentile MAY flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan16b, 4.4 ft Depth | Plan16a, 4.5 ft Depth | Plan16a, 4.6 ft Depth | Plan16a, 4.7 ft Depth | Plan16a, 4.8 ft Depth |              |
|---------------------|------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|
| D06a20              |      | D06a120               | CHANGE6a3120          | D06a4120              | CHANGE6a4120          | D06a6120              | CHANGE6a6120 |
| 1                   | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 20 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 21 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 22 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 24 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 25 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 26 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 27 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 28 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 29 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 30 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 31 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 32 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 33 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 34 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 35 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 36 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 37 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 38 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 39 123              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 124              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 14 124              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 124              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 125              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 125              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 14 125              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 125              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 126              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 126              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 127              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 127              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 14 127              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 127              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 128              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 128              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 129              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 129              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 14 129              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 23 129              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 8 130               | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 10 130              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 11 130              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 12 130              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |
| 13 130              | Pass | same                  | Pass                  | same                  | Pass                  | same                  | Pass         |



American Shad  
20th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan60, 44 ft Depth |             | Plan60, 45 ft Depth |             | Plan60, 46 ft Depth |             | Plan60, 47 ft Depth |             | Plan60, 48 ft Depth |             |
|---------------------|------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|
| DO60x20             |      | DO60x20             | CHANGE60x20 | DO60x20             | CHANGE60x20 | DO60x20             | CHANGE60x20 | DO60x20             | CHANGE60x20 | DO60x20             | CHANGE60x20 |
| 14.130              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 23.130              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.131              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 23.131              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.132              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 23.132              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.133              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 23.133              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.134              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 23.134              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.135              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.136              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.137              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.138              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.139              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.140              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.141              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.142              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.143              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.144              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.145              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.146              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.147              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.148              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.149              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.150              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.151              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.152              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.153              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.154              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.155              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.156              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.157              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.158              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.159              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.160              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.161              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.162              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.163              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.164              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.165              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.166              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |

**American Shad**  
50th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 50% exceedance (10th percentile)

| I J   | Existing Conditions<br>DOx40 | Plan6b, 44 ft Depth<br>DOx40 | Plan6a, 45 ft Depth<br>DOx40 | Plan6a, 46 ft Depth<br>DOx40 | Plan6a, 47 ft Depth<br>DOx40 | Plan6a, 48 ft Depth<br>DOx40 |
|-------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 13 47 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 47 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 47 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 16 47 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 17 47 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 48 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 48 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 48 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 16 48 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 17 48 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 49 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 49 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 49 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 16 49 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 17 49 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 50 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 50 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 50 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 16 50 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 17 50 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 51 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 51 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 51 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 52 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 52 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 52 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 53 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 53 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 53 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 54 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 54 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 54 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 55 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 55 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 55 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 56 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 56 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 56 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 57 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 14 57 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 15 57 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |
| 13 58 | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         | Pass                         |

**American Shad**  
50th percentile MAY flows

Suitable habitat when

D.O.  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions | Plan60, 44 ft Depth<br>DO6a02160 CHANGE6a02160 | Plan60, 45 ft Depth<br>DO6a3160 CHANGE6a3160 | Plan6a, 46 ft Depth<br>DO6a4160 CHANGE6a4160 | Plan6a, 47 ft Depth<br>DO6a5160 CHANGE6a5160 | Plan6a, 48 ft Depth<br>DO6a6160 CHANGE6a6160 |
|---------------------|------------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| 1 J                 | Pass                                           | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 15.55               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 16.55               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 17.55               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 18.55               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 19.55               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 20.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 21.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 22.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 23.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 24.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 25.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 26.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 27.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 28.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 29.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 30.59               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 31.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 32.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 33.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 34.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 35.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 36.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 37.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 38.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 39.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 40.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 41.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 42.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 43.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 44.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 45.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 46.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 47.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 48.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 49.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 50.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 51.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 52.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 53.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 54.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 55.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 56.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 57.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 58.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 59.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 60.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 61.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 62.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 63.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 64.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 65.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 66.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 67.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 68.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 69.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 70.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 71.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 72.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 73.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 74.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 75.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 76.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 77.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 78.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 79.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 80.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 81.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 82.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 83.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 84.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 85.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 86.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 87.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 88.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 89.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 90.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 91.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 92.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 93.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 94.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 95.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 96.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 97.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 98.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 99.61               | Pass                                           | same                                         | same                                         | same                                         | same                                         |
| 100.61              | Pass                                           | same                                         | same                                         | same                                         | same                                         |

**American Shad**  
50th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J   | Existing Conditions<br>DOx540 | Plan8b, 44 ft Depth<br>DOx42160 CHANGEa32150 | Plan8a, 45 ft Depth<br>DOx42160 CHANGEa32150 | Plan8a, 46 ft Depth<br>DOx42160 CHANGEa32150 | Plan8a, 47 ft Depth<br>DOx42160 CHANGEa32150 | Plan8a, 48 ft Depth<br>DOx42160 CHANGEa32150 |
|-------|-------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| 32 65 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 33 65 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 20 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 31 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 32 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 36 66 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 20 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 31 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 32 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 36 67 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 20 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 31 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 32 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 36 68 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 20 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 31 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 32 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 36 69 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 20 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 31 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 32 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 33 70 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 71 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 71 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 71 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 20 71 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 31 71 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 32 71 | Pass                          | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |



**American Shad**  
50th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 50% exceedance (10th percentile)

| J      | J      | Existing Conditions | Plan8b, 44 ft Depth | Plan8a, 45 ft Depth | Plan8a, 46 ft Depth | Plan8a, 47 ft Depth | Plan8a, 48 ft Depth |
|--------|--------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| DOx640 | DOx640 | DOx640              | DOx640              | DOx640              | DOx640              | DOx640              | DOx640              |
| 14 79  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 79  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 79  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 79  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 31 79  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 13 80  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 14 80  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 80  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 80  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 31 80  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 13 81  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 14 81  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 81  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 81  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 31 81  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 13 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 14 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 16 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 17 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 18 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 19 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 20 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 21 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 29 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 31 82  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 13 83  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 14 83  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 83  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 21 83  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 83  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 31 83  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 13 84  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 14 84  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 84  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 21 84  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 84  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 31 84  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 13 85  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 14 85  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 15 85  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 21 85  | Pass   | Pass                | same                | same                | same                | same                | same                |
| 30 85  | Pass   | Pass                | same                | same                | same                | same                | same                |

**American Shad**  
50th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan6b, 44 ft Depth | Plan6a, 45 ft Depth | Plan6a, 46 ft Depth | Plan6a, 47 ft Depth | Plan6a, 48 ft Depth |
|---------------------|------|---------------------|---------------------|---------------------|---------------------|---------------------|
| I                   | J    | DO6a2160            | DO6a3160            | DO6a4160            | DO6a5160            | DO6a6160            |
| 13.86               | Pass | same                | same                | same                | same                | same                |
| 14.86               | Pass | same                | same                | same                | same                | same                |
| 15.86               | Pass | same                | same                | same                | same                | same                |
| 16.86               | Pass | same                | same                | same                | same                | same                |
| 17.86               | Pass | same                | same                | same                | same                | same                |
| 18.86               | Pass | same                | same                | same                | same                | same                |
| 19.86               | Pass | same                | same                | same                | same                | same                |
| 20.86               | Pass | same                | same                | same                | same                | same                |
| 21.86               | Pass | same                | same                | same                | same                | same                |
| 22.86               | Pass | same                | same                | same                | same                | same                |
| 23.86               | Pass | same                | same                | same                | same                | same                |
| 24.86               | Pass | same                | same                | same                | same                | same                |
| 25.86               | Pass | same                | same                | same                | same                | same                |
| 26.86               | Pass | same                | same                | same                | same                | same                |
| 27.86               | Pass | same                | same                | same                | same                | same                |
| 28.86               | Pass | same                | same                | same                | same                | same                |
| 29.86               | Pass | same                | same                | same                | same                | same                |
| 30.86               | Pass | same                | same                | same                | same                | same                |
| 31.86               | Pass | same                | same                | same                | same                | same                |
| 32.86               | Pass | same                | same                | same                | same                | same                |
| 33.86               | Pass | same                | same                | same                | same                | same                |
| 34.86               | Pass | same                | same                | same                | same                | same                |
| 35.86               | Pass | same                | same                | same                | same                | same                |
| 36.86               | Pass | same                | same                | same                | same                | same                |
| 37.86               | Pass | same                | same                | same                | same                | same                |
| 38.86               | Pass | same                | same                | same                | same                | same                |
| 39.86               | Pass | same                | same                | same                | same                | same                |
| 40.86               | Pass | same                | same                | same                | same                | same                |
| 41.86               | Pass | same                | same                | same                | same                | same                |
| 42.86               | Pass | same                | same                | same                | same                | same                |
| 43.86               | Pass | same                | same                | same                | same                | same                |
| 44.86               | Pass | same                | same                | same                | same                | same                |
| 45.86               | Pass | same                | same                | same                | same                | same                |
| 46.86               | Pass | same                | same                | same                | same                | same                |
| 47.86               | Pass | same                | same                | same                | same                | same                |
| 48.86               | Pass | same                | same                | same                | same                | same                |
| 49.86               | Pass | same                | same                | same                | same                | same                |
| 50.86               | Pass | same                | same                | same                | same                | same                |
| 51.86               | Pass | same                | same                | same                | same                | same                |
| 52.86               | Pass | same                | same                | same                | same                | same                |
| 53.86               | Pass | same                | same                | same                | same                | same                |
| 54.86               | Pass | same                | same                | same                | same                | same                |
| 55.86               | Pass | same                | same                | same                | same                | same                |
| 56.86               | Pass | same                | same                | same                | same                | same                |
| 57.86               | Pass | same                | same                | same                | same                | same                |
| 58.86               | Pass | same                | same                | same                | same                | same                |
| 59.86               | Pass | same                | same                | same                | same                | same                |
| 60.86               | Pass | same                | same                | same                | same                | same                |
| 61.86               | Pass | same                | same                | same                | same                | same                |
| 62.86               | Pass | same                | same                | same                | same                | same                |
| 63.86               | Pass | same                | same                | same                | same                | same                |
| 64.86               | Pass | same                | same                | same                | same                | same                |
| 65.86               | Pass | same                | same                | same                | same                | same                |
| 66.86               | Pass | same                | same                | same                | same                | same                |
| 67.86               | Pass | same                | same                | same                | same                | same                |
| 68.86               | Pass | same                | same                | same                | same                | same                |
| 69.86               | Pass | same                | same                | same                | same                | same                |
| 70.86               | Pass | same                | same                | same                | same                | same                |
| 71.86               | Pass | same                | same                | same                | same                | same                |
| 72.86               | Pass | same                | same                | same                | same                | same                |
| 73.86               | Pass | same                | same                | same                | same                | same                |
| 74.86               | Pass | same                | same                | same                | same                | same                |
| 75.86               | Pass | same                | same                | same                | same                | same                |
| 76.86               | Pass | same                | same                | same                | same                | same                |
| 77.86               | Pass | same                | same                | same                | same                | same                |
| 78.86               | Pass | same                | same                | same                | same                | same                |
| 79.86               | Pass | same                | same                | same                | same                | same                |
| 80.86               | Pass | same                | same                | same                | same                | same                |
| 81.86               | Pass | same                | same                | same                | same                | same                |
| 82.86               | Pass | same                | same                | same                | same                | same                |
| 83.86               | Pass | same                | same                | same                | same                | same                |
| 84.86               | Pass | same                | same                | same                | same                | same                |
| 85.86               | Pass | same                | same                | same                | same                | same                |
| 86.86               | Pass | same                | same                | same                | same                | same                |
| 87.86               | Pass | same                | same                | same                | same                | same                |
| 88.86               | Pass | same                | same                | same                | same                | same                |
| 89.86               | Pass | same                | same                | same                | same                | same                |
| 90.86               | Pass | same                | same                | same                | same                | same                |
| 91.86               | Pass | same                | same                | same                | same                | same                |
| 92.86               | Pass | same                | same                | same                | same                | same                |
| 93.86               | Pass | same                | same                | same                | same                | same                |
| 94.86               | Pass | same                | same                | same                | same                | same                |
| 95.86               | Pass | same                | same                | same                | same                | same                |
| 96.86               | Pass | same                | same                | same                | same                | same                |
| 97.86               | Pass | same                | same                | same                | same                | same                |
| 98.86               | Pass | same                | same                | same                | same                | same                |
| 99.86               | Pass | same                | same                | same                | same                | same                |
| 100.86              | Pass | same                | same                | same                | same                | same                |



# **American Shad** 50th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J    | Existing Conditions | Plan8b, 44 ft Depth | Plan8a, 45 ft Depth | Plan8a, 46 ft Depth | Plan8a, 47 ft Depth | Plan8a, 48 ft Depth |
|--------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 14 95  | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 95  | Pass                | same                | same                | same                | same                | same                |
| 16 95  | Pass                | same                | same                | same                | same                | same                |
| 20 95  | Pass                | same                | same                | same                | same                | same                |
| 30 95  | Pass                | same                | same                | same                | same                | same                |
| 13 96  | Pass                | same                | same                | same                | same                | same                |
| 14 96  | Pass                | same                | same                | same                | same                | same                |
| 15 96  | Pass                | same                | same                | same                | same                | same                |
| 26 96  | Pass                | same                | same                | same                | same                | same                |
| 20 96  | Pass                | same                | same                | same                | same                | same                |
| 13 97  | Pass                | same                | same                | same                | same                | same                |
| 14 97  | Pass                | same                | same                | same                | same                | same                |
| 15 97  | Pass                | same                | same                | same                | same                | same                |
| 20 97  | Pass                | same                | same                | same                | same                | same                |
| 30 97  | Pass                | same                | same                | same                | same                | same                |
| 13 98  | Pass                | same                | same                | same                | same                | same                |
| 14 98  | Pass                | same                | same                | same                | same                | same                |
| 15 98  | Pass                | same                | same                | same                | same                | same                |
| 20 98  | Pass                | same                | same                | same                | same                | same                |
| 27 98  | Pass                | same                | same                | same                | same                | same                |
| 28 98  | Pass                | Fail                | Pass/Fail           | Fail                | Pass/Fail           | Pass/Fail           |
| 29 98  | Pass                | same                | same                | same                | same                | same                |
| 20 99  | Pass                | same                | same                | same                | same                | same                |
| 13 99  | Pass                | same                | same                | same                | same                | same                |
| 14 99  | Pass                | same                | same                | same                | same                | same                |
| 15 99  | Pass                | same                | same                | same                | same                | same                |
| 16 99  | Pass                | same                | same                | same                | same                | same                |
| 17 99  | Pass                | same                | same                | same                | same                | same                |
| 18 99  | Pass                | same                | same                | same                | same                | same                |
| 19 99  | Pass                | same                | same                | same                | same                | same                |
| 20 99  | Pass                | same                | same                | same                | same                | same                |
| 21 99  | Pass                | same                | same                | same                | same                | same                |
| 22 99  | Pass                | same                | same                | same                | same                | same                |
| 23 99  | Pass                | same                | same                | same                | same                | same                |
| 26 99  | Pass                | same                | same                | same                | same                | same                |
| 30 99  | Pass                | same                | same                | same                | same                | same                |
| 13 100 | Pass                | same                | same                | same                | same                | same                |
| 14 100 | Pass                | same                | same                | same                | same                | same                |
| 15 100 | Pass                | same                | same                | same                | same                | same                |
| 23 100 | Pass                | same                | same                | same                | same                | same                |
| 24 100 | Pass                | same                | same                | same                | same                | same                |
| 25 100 | Pass                | same                | same                | same                | same                | same                |
| 26 100 | Pass                | same                | same                | same                | same                | same                |





**American Shad**  
50th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J    | Existing Conditions<br>DOx60 | Plan6b, 44 ft Depth<br>DO6x2160 CHANGE6x2160 | Plan6a, 45 ft Depth<br>DO6x3160 CHANGE6x3160 | Plan6a, 46 ft Depth<br>DO6x4160 CHANGE6x4160 | Plan6a, 47 ft Depth<br>DO6x5160 CHANGE6x5160 | Plan6a, 48 ft Depth<br>DO6x6160 CHANGE6x6160 |
|--------|------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| 15 107 | Pass                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 107 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 25 107 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 26 107 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 30 107 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 39 107 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 13 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 14 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 15 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 22 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 25 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 26 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 30 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 39 108 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 13 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 14 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 15 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 22 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 25 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 26 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 30 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 39 109 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 13 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 14 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 15 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 22 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 25 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 26 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 39 110 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 13 111 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 14 111 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 15 111 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 22 111 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 25 111 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 30 111 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 13 112 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 14 112 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 15 112 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 22 112 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 25 112 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 30 112 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 13 113 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 14 113 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 15 113 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 26 113 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 27 113 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |
| 39 113 | Pass                         | same                                         | same                                         | same                                         | same                                         | same                                         |

**American Shad**  
50th percentile MAY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan60, 44 ft Depth |      | Plan60, 45 ft Depth |      | Plan60, 46 ft Depth |      | Plan60, 47 ft Depth |      | Plan60, 48 ft Depth |      |
|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
| DO6042150           |      | DO6042150           |      | DO6042150           |      | DO6042150           |      | DO6042150           |      | DO6042150           |      |
| DOR60               |      | DOR60               |      | DOR60               |      | DOR60               |      | DOR60               |      | DOR60               |      |
| 13.114              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.114              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.114              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.114              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.114              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 33.115              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.115              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.115              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.115              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.115              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13.116              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.116              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.116              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.116              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.116              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 33.117              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.117              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.117              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.117              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.117              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13.118              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.118              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.118              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.118              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.118              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 33.119              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.119              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.119              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.119              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.119              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 33.120              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.120              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.120              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.120              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.120              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13.121              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.121              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.121              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.121              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13.122              | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |

**American Shad**  
50th percentile MAY flows

Suitable habitat when  
D.O.  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)

| I-J    | Existing Conditions<br>DO $\geq$ 4.0 | Plan6b, 44 ft Depth<br>DO $\geq$ 4.0<br>CHANGE $\geq$ 0.25 | Plan6a, 45 ft Depth<br>DO $\geq$ 3.0<br>CHANGE $\geq$ 0.35 | Plan6a, 46 ft Depth<br>DO $\geq$ 4.0<br>CHANGE $\geq$ 0.15 | Plan6a, 47 ft Depth<br>DO $\geq$ 4.0<br>CHANGE $\geq$ 0.15 | Plan6a, 48 ft Depth<br>DO $\geq$ 4.0<br>CHANGE $\geq$ 0.15 |
|--------|--------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| 14 122 | Pass                                 | Pass/Fail                                                  | Fail                                                       | Fail                                                       | Fail                                                       | Fail                                                       |
| 26 122 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 30 122 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 13 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 14 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 15 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 16 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 17 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 18 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 19 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 20 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 21 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 22 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 23 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 24 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 25 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 26 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 27 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 28 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 29 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 30 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 31 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 32 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 33 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 34 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 35 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 36 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 37 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 38 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 39 123 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 13 124 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 14 124 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 23 124 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 13 125 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 14 125 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 23 125 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 13 126 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 14 126 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 23 126 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 14 127 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 23 127 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |
| 13 128 | Pass                                 | same                                                       | Pass                                                       | Pass                                                       | Pass                                                       | Pass                                                       |

**American Shad**  
50th percentile MAY flows

Suitable habitat when:

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan60, 44 ft Depth | Plan60, 45 ft Depth | Plan60, 46 ft Depth | Plan60, 47 ft Depth | Plan60, 48 ft Depth |
|---------------------|------|---------------------|---------------------|---------------------|---------------------|---------------------|
| D0642150            |      | CHANGE602150        | CHANGE603150        | CHANGE604150        | CHANGE605150        | CHANGE606150        |
| 14,126              | Pass | same                | same                | same                | same                | same                |
| 23,128              | Pass | same                | same                | same                | same                | same                |
| 13,129              | Pass | same                | same                | same                | same                | same                |
| 14,129              | Pass | same                | same                | same                | same                | same                |
| 23,129              | Pass | same                | same                | same                | same                | same                |
| 8,130               | Pass | same                | same                | same                | same                | same                |
| 9,130               | Pass | same                | same                | same                | same                | same                |
| 10,130              | Pass | same                | same                | same                | same                | same                |
| 11,130              | Pass | same                | same                | same                | same                | same                |
| 12,130              | Pass | same                | same                | same                | same                | same                |
| 13,130              | Pass | same                | same                | same                | same                | same                |
| 14,130              | Pass | same                | same                | same                | same                | same                |
| 23,130              | Pass | same                | same                | same                | same                | same                |
| 14,131              | Pass | same                | same                | same                | same                | same                |
| 23,131              | Pass | same                | same                | same                | same                | same                |
| 14,132              | Pass | same                | same                | same                | same                | same                |
| 23,132              | Pass | same                | same                | same                | same                | same                |
| 14,133              | Pass | same                | same                | same                | same                | same                |
| 23,133              | Pass | same                | same                | same                | same                | same                |
| 14,134              | Pass | same                | same                | same                | same                | same                |
| 23,134              | Pass | same                | same                | same                | same                | same                |
| 14,135              | Pass | same                | same                | same                | same                | same                |
| 14,136              | Pass | same                | same                | same                | same                | same                |
| 14,137              | Pass | same                | same                | same                | same                | same                |
| 14,138              | Pass | same                | same                | same                | same                | same                |
| 14,139              | Pass | same                | same                | same                | same                | same                |
| 14,140              | Pass | same                | same                | same                | same                | same                |
| 14,141              | Pass | same                | same                | same                | same                | same                |
| 14,142              | Pass | same                | same                | same                | same                | same                |
| 14,143              | Pass | same                | same                | same                | same                | same                |
| 14,144              | Pass | same                | same                | same                | same                | same                |
| 14,145              | Pass | same                | same                | same                | same                | same                |
| 14,146              | Pass | same                | same                | same                | same                | same                |
| 14,147              | Pass | same                | same                | same                | same                | same                |
| 14,148              | Pass | same                | same                | same                | same                | same                |
| 14,149              | Pass | same                | same                | same                | same                | same                |
| 14,150              | Pass | same                | same                | same                | same                | same                |
| 14,151              | Pass | same                | same                | same                | same                | same                |
| 14,152              | Pass | same                | same                | same                | same                | same                |
| 14,153              | Pass | same                | same                | same                | same                | same                |
| 14,154              | Pass | same                | same                | same                | same                | same                |
| 14,155              | Pass | same                | same                | same                | same                | same                |
| 14,156              | Pass | same                | same                | same                | same                | same                |

**American Shad**  
**50th percentile MAY flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 50% exceedance (10th percentile)

| I, J   | Existing Conditions | Plan6b, 44 ft Depth | Plan6a, 45 ft Depth | Plan6a, 46 ft Depth | Plan6a, 47 ft Depth | Plan6a, 48 ft Depth |
|--------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 14 157 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 158 | Pass                | same                | same                | same                | same                | same                |
| 14 159 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 160 | Pass                | same                | same                | same                | same                | same                |
| 14 161 | Pass                | same                | same                | same                | same                | same                |
| 14 162 | Pass                | same                | same                | same                | same                | same                |
| 14 163 | Pass                | same                | same                | same                | same                | same                |
| 14 164 | Pass                | same                | same                | same                | same                | same                |
| 14 165 | Pass                | same                | same                | same                | same                | same                |
| 14 166 | Pass                | same                | same                | same                | same                | same                |

**American Shad**  
80th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I.J.  | Existing Conditions |              | Plan6b, 44 ft Depth |              | Plan6a, 45 ft Depth |              | Plan6a, 46 ft Depth |               | Plan6a, 47 ft Depth |               | Plan6a, 48 ft Depth |               |
|-------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|---------------|---------------------|---------------|---------------------|---------------|
|       | DQx80               | CHANGE6b2760 | DQx3180             | CHANGE6a3180 | DQx3180             | CHANGE6a3180 | DQx44180            | CHANGE6a44180 | DQx47180            | CHANGE6a47180 | DQx48180            | CHANGE6a48180 |
| 13.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 16.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 17.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 18.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 19.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 20.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 21.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 22.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 23.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 24.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 25.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 27.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 28.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 29.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 32.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 33.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 34.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 35.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 36.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 37.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 38.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 39.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 40.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 41.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 42.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 43.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 44.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 45.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 46.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 47.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 48.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 49.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 50.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 51.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 52.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 53.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 54.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 55.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 56.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 57.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 58.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 59.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |
| 60.47 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same          | Pass                | same          | Pass                | same          |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I - J | Existing Conditions | Plan6b, 44 ft Depth<br>DO6a44ft40 CHANGE6a44ft40 | Plan6a, 45 ft Depth<br>DO6a34ft40 CHANGE6a34ft40 | Plan6a, 46 ft Depth<br>DO6a46ft40 CHANGE6a46ft40 | Plan6a, 47 ft Depth<br>DO6a47ft40 CHANGE6a47ft40 | Plan6a, 48 ft Depth<br>DO6a48ft40 CHANGE6a48ft40 |
|-------|---------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| 14 56 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 58 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 59 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 59 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 59 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 59 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 59 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 32 59 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 60 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 60 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 60 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 60 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 60 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 32 60 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 61 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 61 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 61 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 61 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 61 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 32 61 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 62 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 62 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 62 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 62 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 62 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 32 62 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 63 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 63 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 63 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 63 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 63 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 32 63 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 64 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 64 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 64 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 64 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 64 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 32 64 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 13 65 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 14 65 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 15 65 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 20 65 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |
| 31 65 | Pass                | Pass                                             | Pass                                             | Pass                                             | Pass                                             | Pass                                             |



**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J   | Existing Conditions |          | Plan6b, 44 ft Depth |          | Plan6a, 45 ft Depth |          | Plan6a, 46 ft Depth |          | Plan6a, 47 ft Depth |          | Plan6a, 48 ft Depth |  |
|-------|---------------------|----------|---------------------|----------|---------------------|----------|---------------------|----------|---------------------|----------|---------------------|--|
|       | D06a180             | D06a2180 | CHANGE6a2180        | D06a3180 | CHANGE6a3180        | D06a4180 | CHANGE6a4180        | D06a5180 | CHANGE6a5180        | D06a6180 | CHANGE6a6180        |  |
| 32.65 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 33.65 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 33.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 14.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 15.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 30.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 31.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 32.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 36.66 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 13.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 14.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 15.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 30.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 31.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 32.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 36.67 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 13.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 14.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 15.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 30.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 31.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 32.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 36.68 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 13.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 14.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 15.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 30.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 31.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 32.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 36.69 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 13.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 14.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 15.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 30.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 31.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 32.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 36.70 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 13.71 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 14.71 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 15.71 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 30.71 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 31.71 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |
| 32.71 | Pass                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                | Pass     | same                |  |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan6b, 44 ft Depth |      | Plan6a, 45 ft Depth |      | Plan6a, 46 ft Depth |      | Plan6a, 47 ft Depth |      | Plan6a, 48 ft Depth |      |
|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
| DOex80              |      | DO6a2f80            |      | DO6a3f80            |      | DO6a4f80            |      | DO6a5f80            |      | DO6a6f80            |      |
| I, J                |      | CHANGE6b2f80        |      | CHANGE6a3f80        |      | CHANGE6a4f80        |      | CHANGE6a5f80        |      | CHANGE6a6f80        |      |
| 13 72               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 72               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 72               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 72               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 72               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 72               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13 73               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 73               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 73               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 73               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 73               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 73               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 74               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 74               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 74               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 74               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 74               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13 75               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 75               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 75               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 75               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 75               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 75               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 16 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 17 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 76               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 16 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 17 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 77               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 16 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 17 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32 78               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 13 79               | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| I-J   | Existing Conditions |        | Plan6b, 44 ft Depth |               | Plan6a, 45 ft Depth |               | Plan6a, 46 ft Depth |               | Plan6a, 47 ft Depth |               | Plan6a, 48 ft Depth |               |
|-------|---------------------|--------|---------------------|---------------|---------------------|---------------|---------------------|---------------|---------------------|---------------|---------------------|---------------|
|       | DQx80               | DQx180 | DQ6b44180           | CHANGE6b44180 | DQ6a45180           | CHANGE6a45180 | DQ6a46180           | CHANGE6a46180 | DQ6a47180           | CHANGE6a47180 | DQ6a48180           | CHANGE6a48180 |
| 14.79 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.79 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.79 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.79 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.50 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.80 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.80 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.80 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.80 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.81 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.81 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.81 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.81 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.81 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 16.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 17.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 18.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 20.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 21.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 29.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.82 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.83 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.83 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.83 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 21.83 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 20.83 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.83 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.84 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.84 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.84 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 21.84 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 20.84 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 31.84 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.85 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.85 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.85 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 21.85 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 20.85 | Pass                | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I. J. | Existing Conditions | Plan6b, 44 ft Depth | Plan6a, 45 ft Depth | Plan6a, 46 ft Depth | Plan6a, 47 ft Depth | Plan6a, 48 ft Depth |
|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|       | DOex80              | DO6a2f80            | DO6a3f80            | DO6a4f80            | DO6a5f80            | DO6a6f80            |
| 13.66 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.66 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.86 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 21.86 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.66 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.87 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.87 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.87 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.87 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.88 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.88 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.88 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 30.88 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.89 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.89 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.89 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.89 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.90 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.90 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.90 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.90 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.91 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.91 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.91 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16.91 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.91 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.92 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.92 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.92 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16.92 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.92 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.93 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.93 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.93 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16.93 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.93 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.94 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14.94 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15.94 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16.94 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 20.94 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13.95 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J    | Existing Conditions |              | Plan5a, 44 ft Depth |              | Plan5a, 45 ft Depth |              | Plan5a, 46 ft Depth |              | Plan5a, 47 ft Depth |              | Plan5a, 48 ft Depth |              |
|--------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|
|        | D05a1200            | CHANGE5a1200 | D05a1200            | CHANGE5a1200 | D05a1300            | CHANGE5a1300 | D05a1400            | CHANGE5a1400 | D05a1500            | CHANGE5a1500 | D05a1600            | CHANGE5a1600 |
| 14.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 16.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 20.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30.95  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13.97  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14.97  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15.97  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26.97  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30.97  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 27.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 28.98  | Pass                | PassToFail   | Fail                | PassToFail   | Fail                | PassToFail   | Fail                | PassToFail   | Fail                | PassToFail   | Fail                | PassToFail   |
| 29.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30.98  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 16.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 17.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 18.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 19.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 20.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 21.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 22.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30.99  | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 24.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 25.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26.100 | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |        | Plan6b, 44 ft Depth |               | Plan6a, 45 ft Depth |               | Plan6a, 46 ft Depth |               | Plan6a, 47 ft Depth |               | Plan6a, 48 ft Depth |               |
|---------------------|--------|---------------------|---------------|---------------------|---------------|---------------------|---------------|---------------------|---------------|---------------------|---------------|
| I-J                 | D0exd0 | D0n2fz80            | CHANGE6b2fz80 | D06a3fz80           | CHANGE6a3fz80 | D06a4fz80           | CHANGE6a4fz80 | D06a5fz80           | CHANGE6a5fz80 | D06a6fz80           | CHANGE6a6fz80 |
| 30.100              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 16.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 17.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 18.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 19.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 20.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 21.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 22.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 23.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.101              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.102              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.102              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.102              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.102              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.102              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.103              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.103              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.103              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.103              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.103              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.104              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.104              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.104              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.104              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.104              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.105              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.105              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.105              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.105              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.105              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.106              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.106              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 15.106              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 26.106              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 30.106              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 13.107              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |
| 14.107              | Pass   | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          | Pass                | same          |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan6b, 44 ft Depth |                | Plan6a, 45 ft Depth |                | Plan6a, 46 ft Depth |                | Plan6a, 47 ft Depth |                | Plan6a, 48 ft Depth |                |
|---------------------|------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|
| Dox80               |      | DO6b44ft80          | CHANGE6b44ft80 | DO6a45ft80          | CHANGE6a45ft80 | DO6a46ft80          | CHANGE6a46ft80 | DO6a47ft80          | CHANGE6a47ft80 | DO6a48ft80          | CHANGE6a48ft80 |
| 15.107              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 22.107              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 26.107              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 30.107              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 39.107              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 13.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 14.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 15.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 22.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 26.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 30.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 39.109              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 13.110              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 14.110              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 15.110              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 22.110              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 26.110              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 39.110              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 13.111              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 14.111              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 15.111              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 22.111              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 26.111              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 39.111              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 13.112              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 14.112              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 15.112              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 22.112              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 26.112              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 39.112              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 13.113              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 14.113              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 15.113              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 22.113              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 26.113              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |
| 39.113              | Pass | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           | Pass                | same           |



## Suitable habitat when

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**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| I.J.   | Existing Conditions |           | Plan6b, 44 ft Depth |              | Plan6a, 45 ft Depth |              | Plan6a, 46 ft Depth |              | Plan6a, 47 ft Depth |              | Plan6a, 48 ft Depth |              |
|--------|---------------------|-----------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|---------------------|--------------|
|        | DOx80               | Pass/Fail | DOx80               | CHANGE6b2780 | DOx80               | CHANGE6a3180 | DOx80               | CHANGE6a4180 | DOx80               | CHANGE6a5180 | DOx80               | CHANGE6a6180 |
| 14,122 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26,122 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30,122 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 15,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 16,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 17,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 18,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 19,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 20,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 21,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 22,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 24,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 25,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 26,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 27,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 28,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 29,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 30,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 31,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 32,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 33,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 34,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 35,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 36,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 37,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 38,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 39,123 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13,124 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14,124 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23,124 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13,125 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14,125 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23,125 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13,126 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14,126 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23,126 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13,127 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 14,127 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 23,127 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |
| 13,128 | Pass                | Pass      | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         | Pass                | same         |

**American Shad**  
80th percentile MAY flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J    | Existing Conditions | Plan6b, 44 ft Depth | Plan6a, 45 ft Depth | Plan6a, 46 ft Depth | Plan6a, 47 ft Depth | Plan6a, 48 ft Depth |
|--------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 14 126 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 128 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 129 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 129 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 129 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 8 130  | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 9 130  | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 10 130 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 11 130 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 12 130 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 130 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 130 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 130 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 131 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 131 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 132 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 132 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 133 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 133 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 134 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 23 134 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 135 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 136 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 137 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 138 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 139 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 140 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 141 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 142 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 143 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 144 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 145 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 146 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 147 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 148 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 149 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 150 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 151 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 152 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 153 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 154 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 155 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 156 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |

American Shad  
80th percentile MAY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I, J   | Existing Conditions |      | Plan 6b, 44 ft Depth |              | Plan 6a, 45 ft Depth |              | Plan 6a, 46 ft Depth |              | Plan 6a, 47 ft Depth |              | Plan 6a, 48 ft Depth |              |
|--------|---------------------|------|----------------------|--------------|----------------------|--------------|----------------------|--------------|----------------------|--------------|----------------------|--------------|
|        | DOex80              | Pass | DO6b2780             | CHANGE6b2780 | DO6a3180             | CHANGE6a3180 | DO6a4180             | CHANGE6a4180 | DO6a5180             | CHANGE6a5180 | DO6a6180             | CHANGE6a6180 |
| 14,157 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,158 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,159 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,160 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,161 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,162 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,163 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,164 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,165 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |
| 14,166 | Pass                | Pass | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         | Pass                 | same         |

**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| I     | J     | Existing Conditions | Plan6b: 44 ft Depth | Plan6b: 45 ft Depth | Plan6b: 46 ft Depth | Plan6b: 47 ft Depth | Plan6b: 48 ft Depth |
|-------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|       |       | D.O.±0.2            | CHANGE±0.2          | D.O.±0.3            | CHANGE±0.3          | D.O.±0.4            | CHANGE±0.4          |
| 13.47 | 13.47 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.47 | 14.47 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.47 | 15.47 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 16.47 | 16.47 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 17.47 | 17.47 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.48 | 13.48 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.48 | 14.48 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.48 | 15.48 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 16.48 | 16.48 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 17.48 | 17.48 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.49 | 13.49 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.49 | 14.49 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.49 | 15.49 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 16.49 | 16.49 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 17.49 | 17.49 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.50 | 13.50 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.50 | 14.50 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.50 | 15.50 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 16.50 | 16.50 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 17.50 | 17.50 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 18.50 | 18.50 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.51 | 13.51 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.51 | 14.51 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.51 | 15.51 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.52 | 13.52 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.52 | 14.52 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.52 | 15.52 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.53 | 13.53 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.53 | 14.53 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.53 | 15.53 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.54 | 13.54 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.54 | 14.54 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.54 | 15.54 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.55 | 13.55 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.55 | 14.55 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.55 | 15.55 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.56 | 13.56 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.56 | 14.56 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.56 | 15.56 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.57 | 13.57 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.57 | 14.57 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 15.57 | 15.57 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 13.58 | 13.58 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |
| 14.58 | 14.58 | Pass                | same                | Pass                | same                | Pass                | same                |
|       |       | Pass                | same                | Pass                | same                | Pass                | same                |

**American Shad**  
50th percentile JANUARY flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| I.J.  | Existing Conditions |            | Plan6b 44 ft Depth |            | Plan6a 45 ft Depth |            | Plan6a 46 ft Depth |            | Plan6a 47 ft Depth |            | Plan6a 48 ft Depth |            |
|-------|---------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
|       | D06a5ft             | CHANGEa5ft | D06a4ft            | CHANGEa4ft | D06a3ft            | CHANGEa3ft | D06a2ft            | CHANGEa2ft | D06a1ft            | CHANGEa1ft | D06a0ft            | CHANGEa0ft |
| 15.56 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.59 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.50 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.56 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.59 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.59 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.59 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.60 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.60 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.60 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.60 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.60 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.61 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.61 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.61 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.61 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.61 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.61 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.62 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.62 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.62 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.62 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.62 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.62 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.63 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.63 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.63 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.63 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.63 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.63 | Fail                | Fall       | Pass               | Fall       | Pass               | Fall       | Pass               | Fall       | Pass               | Fall       | Pass               | Fall       |
| 13.64 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.64 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.64 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.64 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.64 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.64 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 33.65 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |

**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Plan6b: 44 ft Depth |             | Plan6a: 45 ft Depth |             | Plan6a: 46 ft Depth |             | Plan6a: 47 ft Depth |             | Plan6a: 48 ft Depth |             |
|---------------------|------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|
| I                   | J    | Doea3ht             | CHANGE6a3ht | Doea3ht             | CHANGE6a3ht | Doea3ht             | CHANGE6a3ht | Doea3ht             | CHANGE6a3ht | Doea3ht             | CHANGE6a3ht |
| 13.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 20.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 31.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 32.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 36.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 37.66               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 41.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 45.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 46.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 50.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 51.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 52.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 56.67               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 61.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 62.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 63.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 64.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 65.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 66.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 67.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 68.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 69.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 70.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 71.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 72.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 73.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 74.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 75.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 76.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 77.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 78.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 79.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 80.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 81.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 82.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 83.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 84.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 85.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 86.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 87.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 88.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 89.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 90.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 91.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 92.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 93.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 94.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 95.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 96.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 97.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 98.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 99.68               | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 100.68              | Pass | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |

**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| I.J.  | Existing Conditions |            | Plan6b 44 ft Depth |            | Plan6a 45 ft Depth |            | Plan6a 46 ft Depth |            | Plan6a 47 ft Depth |            | Plan6a 48 ft Depth |            |
|-------|---------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
|       | D06a5h              | CHANGE5a5h | D06a5h             | CHANGE5a5h | D06a5h             | CHANGE5a5h | D06a5h             | CHANGE5a5h | D06a5h             | CHANGE5a5h | D06a5h             | CHANGE5a5h |
| 30.72 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.72 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.72 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 33.72 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.73 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.73 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.73 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.73 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.73 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.74 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.74 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.74 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.74 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.74 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.75 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.75 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.75 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.75 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.75 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 16.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 17.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.76 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 16.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 17.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.77 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 16.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 17.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 31.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 32.78 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.79 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.79 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 16.79 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 17.79 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |

# **American Shad** 50th percentile JANUARY flows

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J   | Existing Conditions |      | Plan6b: 44 ft Depth |      | Plan6a: 45 ft Depth |      | Plan6a: 45 ft Depth |      | Plan6a: 47 ft Depth |      | Plan6a: 48 ft Depth |      |
|-------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
|       | DO                  | CH   | DO                  | CH   | DO                  | CH   | DO                  | CH   | DO                  | CH   | DO                  | CH   |
| 13.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 14.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 15.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 16.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 17.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 18.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 19.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 20.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 21.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 22.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 23.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 24.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 25.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 26.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 27.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 28.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 29.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 33.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 34.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 35.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 36.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 37.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 38.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 39.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 40.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 41.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 42.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 43.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 44.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 45.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 46.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 47.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 48.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 49.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 50.60 | Pass                | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |



**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I J   | Existing Conditions |            | Plan6b 44 ft Depth |            | Plan6a 45 ft Depth |            | Plan6b 46 ft Depth |            | Plan6a 47 ft Depth |            | Plan6a 48 ft Depth |            |
|-------|---------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
|       | D06a5h              | CHANGE6a5h | D06a5h             | CHANGE6a5h | D06a5h             | CHANGE6a5h | D06a5h             | CHANGE6a5h | D06a5h             | CHANGE6a5h | D06a5h             | CHANGE6a5h |
| 13.87 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.87 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.87 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.87 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.88 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.88 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.88 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.88 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.89 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.89 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.89 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.89 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.90 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.90 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.90 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.90 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.91 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.91 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.91 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.91 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.92 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.92 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.92 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.92 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.93 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.93 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.93 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.93 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.94 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.94 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.94 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.94 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 26.94 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.94 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.95 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.95 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 15.95 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 20.95 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 26.95 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 30.95 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 13.96 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |





**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I<br>J | Existing Conditions |             | Plan6b: 44 ft Depth |             | Plan6b: 45 ft Depth |             | Plan6b: 46 ft Depth |             | Plan6b: 47 ft Depth |             | Plan6b: 48 ft Depth |             |
|--------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|
|        | D06a3ft             | CHANGE6a3ft | D06a3ft             | CHANGE6a3ft | D06a3ft             | CHANGE6a3ft | D06a3ft             | CHANGE6a3ft | D06a3ft             | CHANGE6a3ft | D06a3ft             | CHANGE6a3ft |
| 22 106 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 106 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 30 106 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 106 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 30 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 108 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 30 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 110 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 111 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 111 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 111 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 111 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 111 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 111 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 112 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 112 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 112 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 112 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 112 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 112 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 113 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 113 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 113 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 113 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 113 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 113 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 114 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 114 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 114 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 114 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 26 114 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 39 114 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 13 115 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 14 115 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 15 115 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |
| 22 115 | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        | Pass                | same        |

**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I-J    | Existing Conditions |               | Plan6b 44 ft Depth |              | Plan6a 45 ft Depth |              | Plan6a 46 ft Depth |               | Plan6a 47 ft Depth |               | Plan6a 48 ft Depth |               |
|--------|---------------------|---------------|--------------------|--------------|--------------------|--------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|
|        | D06a12h             | CHANGEB06a12h | D06a3h             | CHANGEB06a3h | D06a3h             | CHANGEB06a3h | D06a4ft            | CHANGEB06a4ft | D06a5ft            | CHANGEB06a5ft | D06a6ft            | CHANGEB06a6ft |
| 39.115 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.116 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.116 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.116 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.116 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.116 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.117 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.117 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.117 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.117 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.117 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.118 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.118 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.118 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.118 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.118 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.119 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.119 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.119 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.119 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.119 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.120 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.120 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.120 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.120 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.120 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.121 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.121 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.121 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.121 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.121 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.122 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.122 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.122 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.122 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 13.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 14.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 15.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 26.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 39.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 17.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 18.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |
| 19.123 | Pass                | same          | Pass               | same         | Pass               | same         | Pass               | same          | Pass               | same          | Pass               | same          |

**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| I      | J    | Existing Conditions |      | Plan6b: 44 ft Depth |      | Plan6a: 45 ft Depth |      | Plan6a: 45 ft Depth |      | Plan6a: 47 ft Depth |      | Plan6a: 48 ft Depth |      |
|--------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
|        |      | DOW                 | CHG  | DOW                 | CHG  | DOW                 | CHG  | DOW                 | CHG  | DOW                 | CHG  | DOW                 | CHG  |
| 20.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 21.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 22.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 23.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 24.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 25.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 26.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 27.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 28.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 29.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 30.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 31.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 32.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 33.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 34.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 35.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 36.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 37.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 38.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 39.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 40.123 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 41.124 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 42.124 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 43.124 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 44.125 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 45.125 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 46.125 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 47.126 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 48.126 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 49.126 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 50.127 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 51.127 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 52.127 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 53.128 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 54.128 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 55.128 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 56.129 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 57.129 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 58.129 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 59.130 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 60.130 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 61.130 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 62.130 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |
| 63.130 | Pass | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same | Pass                | same |

**American Shad**  
**50th percentile JANUARY flows**

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| I.J.   | Existing Conditions |            | Plan6b 44 ft Depth |            | Plan6a 45 ft Depth |            | Plan6a 46 ft Depth |            | Plan6a 47 ft Depth |            | Plan6a 48 ft Depth |            |
|--------|---------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
|        | D06a2h              | CHANGE6a2h | D06a3h             | CHANGE6a3h | D06a4h             | CHANGE6a4h | D06a5h             | CHANGE6a5h | D06a6h             | CHANGE6a6h | D06a7h             | CHANGE6a7h |
| 14.130 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.131 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 23.130 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 23.131 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.132 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 23.132 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.133 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 23.133 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.134 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 23.134 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.135 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.136 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.137 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.138 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.139 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.140 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.141 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.142 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.143 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.144 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.145 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.146 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.147 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.148 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.149 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.150 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.151 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.152 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.153 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.154 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.155 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.156 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.157 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.158 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.159 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.160 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.161 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.162 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.163 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.164 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.165 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |
| 14.166 | Pass                | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       | Pass               | same       |

**American Shad**  
August average flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

| L_J   | Existing Conditions | Plan6b, 44 ft Depth | Plan6a, 45 ft Depth | Plan6a, 46 ft Depth | Plan6a, 47 ft Depth | Plan6a, 48 ft Depth |
|-------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|       | Downlisting         | Downlisting         | Downlisting         | Downlisting         | Downlisting         | Downlisting         |
| 13 47 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 47 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 47 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 47 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 47 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 48 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 18 48 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 48 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 48 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 48 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 48 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 49 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 49 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 49 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 49 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 49 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 50 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 50 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 50 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 16 50 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 17 50 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 18 50 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 51 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 51 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 51 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 52 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 52 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 52 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 53 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 53 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 53 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 54 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 54 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 54 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 55 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 55 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 55 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 56 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 56 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 56 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 57 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 57 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 57 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 58 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 14 58 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 15 58 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |
| 13 59 | Pass                | Pass                | Pass                | Pass                | Pass                | Pass                |



**American Shad**  
**August average flows**

Suitable habitat when  
D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| L/J   | Existing Conditions |          | Plan 6a, 44 ft Depth |          | Plan 6a, 45 ft Depth |          | Plan 6a, 46 ft Depth |          | Plan 6a, 47 ft Depth |          | Plan 6a, 48 ft Depth |          |              |
|-------|---------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|--------------|
|       | Downcrossing        | DO Basin | Change/Depth         | DO Basin | Change/Depth         | DO Basin | Change/Depth         | DO Basin | Change/Depth         | DO Basin | Change/Depth         | DO Basin | Change/Depth |
| 14.59 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.56 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.56 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.59 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.58 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.60 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.60 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.60 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.60 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.60 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.60 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.61 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.61 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.61 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.61 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.61 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.61 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.62 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.62 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.62 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.62 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.62 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.62 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.63 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.63 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.63 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.63 | Fail                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.63 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.63 | Fail                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.64 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.64 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.64 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.64 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.64 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.64 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 31.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 32.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 33.65 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 13.66 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 14.66 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 15.66 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |
| 30.66 | Pass                | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same                 | Pass     | same         |

**American Shad**  
**August average flows**

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

|       | Existing Conditions<br>Downstream | Planb. 44 ft Depth<br>Dobash Change | Planb. 45 ft Depth<br>Change | Planb. 46 ft Depth<br>Dobash Change | Planb. 47 ft Depth<br>Change | Planb. 48 ft Depth<br>Dobash Change |
|-------|-----------------------------------|-------------------------------------|------------------------------|-------------------------------------|------------------------------|-------------------------------------|
| 1     | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.06 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.06 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 36.06 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 38.06 | Pass                              | Pass                                | Fail                         | Pass/Fail                           | Fail                         | Pass/Fail                           |
| 13.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 14.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 15.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 30.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 36.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 38.07 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 13.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 14.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 15.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 30.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 36.08 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 38.08 | Fail                              | Fail/Pass                           | Fail/Pass                    | Fail                                | Fail                         | Fail                                |
| 13.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 14.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 15.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 30.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 36.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 38.09 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 13.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 14.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 15.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 30.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 36.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 38.10 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 13.11 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 14.11 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 15.11 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 30.11 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.11 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.11 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 13.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 14.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 15.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 30.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 31.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 32.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 36.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 38.12 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |
| 13.13 | Pass                              | Pass                                | Pass                         | Pass                                | Pass                         | Pass                                |



# **American Shad** August average flows

Suitable habitat when

D.O.  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)

|       | Existing Conditions | Plan6b   | 44 ft Depth    | Plan6a   | 45 ft Depth    | Plan6a   | 46 ft Depth    | Plan6a   | 47 ft Depth    | Plan6a   | 48 ft Depth    |
|-------|---------------------|----------|----------------|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
|       | Downwelling         | Downbath | ChangeDownbath | Downbath | ChangeDownbath | Downbath | ChangeDownbath | Downbath | ChangeDownbath | Downbath | ChangeDownbath |
| 13 81 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 81 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 81 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 81 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 31 81 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 16 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 17 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 18 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 19 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 20 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 21 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 29 82 | Pass                | Fail     | PassToFail     | Fail     | PassToFail     | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 31 82 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 83 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 83 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 83 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 21 83 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 83 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 31 83 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 84 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 84 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 84 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 21 84 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 84 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 31 84 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 85 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 85 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 85 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 21 85 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 85 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 86 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 86 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 86 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 21 86 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 86 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 87 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 14 87 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 15 87 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 30 87 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |
| 31 87 | Pass                | Fail     | PassToFail     | Fail     | PassToFail     | Pass     | same           | Pass     | same           | Pass     | same           |
| 13 88 | Pass                | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           | Pass     | same           |

# American Shad

## August average flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| LJ    | Existing Conditions |         | Plan6b, 44 ft Depth |         | Plan6b, 45 ft Depth |         | Plan6b, 46 ft Depth |         | Plan6b, 47 ft Depth |         | Plan6b, 48 ft Depth |         |
|-------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|
|       | DOWsling            | DOBasin | ChangeBasin         | DOBasin | ChangeBasin         | DOBasin | ChangeBasin         | DOBasin | ChangeBasin         | DOBasin | ChangeBasin         | DOBasin |
| 14.88 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.28 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.89 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.69 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.69 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.89 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.69 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.90 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.90 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.90 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.90 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.91 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.91 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.91 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 16.91 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.91 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.92 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.92 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.92 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 16.92 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.92 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 32.92 | Fail                | Pass    | Fail/Pass           | Pass    | same                | Pass    | Fail/Pass           | Pass    | same                | Pass    | Fail/Pass           | Pass    |
| 13.93 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.93 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.93 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 16.93 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.93 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.94 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.94 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.94 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 16.94 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 26.94 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.94 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.95 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.95 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.95 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 16.95 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 26.95 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.95 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 11.96 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 13.96 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 14.96 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 15.96 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 26.96 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |
| 30.96 | Pass                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    | same                | Pass    |



**American Shad**  
**August average flows**

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| LJ     | Existing Conditions |                 | Plan 44 ft Depth |                 | Plan 45 ft Depth |                 | Plan 46 ft Depth |                 | Plan 47 ft Depth |                 | Plan 48 ft Depth |                 |
|--------|---------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
|        | Doubling            | DO Basin Change | DO Basin Change  | DO Basin Change | DO Basin Change  | DO Basin Change | DO Basin Change  | DO Basin Change | DO Basin Change  | DO Basin Change | DO Basin Change  | DO Basin Change |
| 30 101 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 102 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 102 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 102 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 102 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 102 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 103 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 103 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 103 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 103 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 103 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 11 104 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 104 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 104 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 104 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 104 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 104 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 105 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 105 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 105 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 105 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 105 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 106 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 106 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 106 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 106 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 106 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 107 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 107 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 107 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 107 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 107 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 108 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 108 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 15 108 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 25 108 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 30 108 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 13 109 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |
| 14 109 | Pass                | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            | Pass             | same            |

**American Shad**  
August average flows

Suitable habitat when  
D.O.  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)

| LJ     | Existing Conditions<br>Downstream | Plan66, 44 ft Depth<br>DO Basin Change Depth | Plan66, 45 ft Depth<br>DO Basin Change Depth | Plan66, 46 ft Depth<br>DO Basin Change Depth | Plan66, 47 ft Depth<br>DO Basin Change Depth | Plan66, 48 ft Depth<br>DO Basin Change Depth |
|--------|-----------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| 15 100 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 100 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 109 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 30 109 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 109 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 25 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 110 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 111 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 111 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 111 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 111 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 26 111 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 111 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 112 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 112 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 112 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 112 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 26 112 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 112 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 26 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 113 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 26 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 114 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 115 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 115 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 115 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 115 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 26 115 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 115 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 13 116 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 14 116 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 15 116 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 22 116 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 26 116 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |
| 39 116 | Pass                              | Pass                                         | Pass                                         | Pass                                         | Pass                                         | Pass                                         |



## American Shad

## August/ average flows

Suitable habitat when

D.O. &gt;= 4.0 mg/l at 90% exceedance (10th percentile)

| Existing Conditions |      | Planb. 44 ft Depth | Planb. 45 ft Depth | Planb. 46 ft Depth | Planb. 47 ft Depth | Planb. 48 ft Depth |
|---------------------|------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Downing             |      | DOBasin            | DOBasin            | DOBasin            | DOBasin            | DOBasin            |
|                     |      | Change             | Change             | Change             | Change             | Change             |
|                     |      | Pass/Fail          | Pass/Fail          | Pass/Fail          | Pass/Fail          | Pass/Fail          |
| 38 116              | Pass | same               | same               | same               | same               | same               |
| 13 117              | Pass | same               | same               | same               | same               | same               |
| 14 117              | Pass | same               | same               | same               | same               | same               |
| 15 117              | Pass | same               | same               | same               | same               | same               |
| 25 117              | Pass | same               | same               | same               | same               | same               |
| 30 117              | Pass | same               | same               | same               | same               | same               |
| 38 117              | Pass | same               | same               | same               | same               | same               |
| 13 118              | Pass | same               | same               | same               | same               | same               |
| 14 118              | Pass | same               | same               | same               | same               | same               |
| 15 118              | Pass | same               | same               | same               | same               | same               |
| 20 118              | Pass | same               | same               | same               | same               | same               |
| 20 118              | Pass | same               | same               | same               | same               | same               |
| 33 118              | Pass | same               | same               | same               | same               | same               |
| 33 119              | Pass | same               | same               | same               | same               | same               |
| 14 119              | Pass | same               | same               | same               | same               | same               |
| 15 119              | Pass | same               | same               | same               | same               | same               |
| 20 119              | Pass | same               | same               | same               | same               | same               |
| 20 119              | Pass | same               | same               | same               | same               | same               |
| 38 119              | Pass | same               | same               | same               | same               | same               |
| 13 120              | Pass | same               | same               | same               | same               | same               |
| 14 120              | Pass | same               | same               | same               | same               | same               |
| 15 120              | Pass | same               | same               | same               | same               | same               |
| 16 120              | Pass | same               | same               | same               | same               | same               |
| 28 120              | Pass | same               | same               | same               | same               | same               |
| 30 120              | Pass | same               | same               | same               | same               | same               |
| 13 121              | Pass | same               | same               | same               | same               | same               |
| 14 121              | Pass | same               | same               | same               | same               | same               |
| 28 121              | Pass | same               | same               | same               | same               | same               |
| 38 121              | Pass | same               | same               | same               | same               | same               |
| 13 122              | Pass | same               | same               | same               | same               | same               |
| 28 122              | Pass | same               | same               | same               | same               | same               |
| 30 122              | Pass | same               | same               | same               | same               | same               |
| 41 122              | Pass | same               | same               | same               | same               | same               |
| 13 123              | Pass | same               | same               | same               | same               | same               |
| 14 123              | Pass | same               | same               | same               | same               | same               |
| 15 123              | Pass | same               | same               | same               | same               | same               |
| 16 123              | Pass | same               | same               | same               | same               | same               |
| 17 123              | Pass | same               | same               | same               | same               | same               |
| 18 123              | Pass | same               | same               | same               | same               | same               |
| 19 123              | Pass | same               | same               | same               | same               | same               |
| 20 123              | Pass | same               | same               | same               | same               | same               |
| 21 123              | Pass | same               | same               | same               | same               | same               |
| 22 123              | Pass | same               | same               | same               | same               | same               |
| 23 123              | Pass | same               | same               | same               | same               | same               |
| 24 123              | Pass | same               | same               | same               | same               | same               |
| 25 123              | Pass | same               | same               | same               | same               | same               |

**American Shad**  
August average flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| U      | Existing Conditions | Plan66   | 44 ft Depth  | Plan66   | 45 ft Depth  | Plan66   | 46 ft Depth  | Plan66   | 47 ft Depth  | Plan66   | 48 ft Depth  |
|--------|---------------------|----------|--------------|----------|--------------|----------|--------------|----------|--------------|----------|--------------|
|        | Downwelling         | Downcast | Change/Depth | Downcast | Change/Depth | Downcast | Change/Depth | Downcast | Change/Depth | Downcast | Change/Depth |
| 26 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 27 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 28 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 29 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 30 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 31 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 32 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 33 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 34 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 35 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 36 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 37 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 38 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 39 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 40 123 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 41 124 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 42 124 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 43 125 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 44 125 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 45 125 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 46 125 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 47 125 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 48 126 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 49 126 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 50 127 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 51 127 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 52 127 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 53 128 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 54 128 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 55 128 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 56 129 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 57 129 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 58 129 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 59 130 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 60 130 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 61 130 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 62 131 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 63 131 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 64 131 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |
| 65 132 | Pass                | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         | Pass     | same         |

American Shad

August average flows

Suitable habitat when

D.O. >= 4.0 mg/l at 90% exceedance (10th percentile)

| LJ     | Existing Conditions |        | Plan6b, 44 ft Depth |        | Plan6a, 45 ft Depth |        | Plan6a, 46 ft Depth |        | Plan6a, 47 ft Depth |        | Plan6a, 48 ft Depth |        |
|--------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|
|        | DOWsing             | DOcrit | Change              | DOcrit | Change              | DOcrit | Change              | DOcrit | Change              | DOcrit | Change              | DOcrit |
| 14 133 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 22 133 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 134 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 22 134 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 135 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 136 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 137 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 138 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 139 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 140 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 141 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 142 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 143 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 144 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 145 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 146 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 147 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 148 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 149 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 150 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 151 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 152 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 153 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 154 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 155 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 156 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 157 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 158 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 159 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 160 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 161 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 162 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 163 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 164 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 165 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |
| 14 166 | Pass                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   | same                | Pass   |

(2) Mean velocity  $\approx 30$  cm/s, and

[illegible]

(2) Mean velocity = 32 cm/s and

[illegible]





**Striped Bass - Eggs**  
 20th percentile APRIL flow  
 50th percentile APRIL flow  
 75th percentile APRIL flow  
 (1) Mean 20th percentile acidity  $\leq 8$  pH  
 (2) 10th percentile 2.0 or 4.5 mg/l

| Eating Conditions |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, 7d Depth |  | Run 3a, 4d, 7d Depth |  | Run 1b, 4d, |  |
|-------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------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|-------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------------------|--|----------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## Striped Bass - Eggs

20th percentile APFEL 100%

Salinity: 10-15 ppt

(1) Mean 50th percentile salinity = 9 ppt

(2) Mean 50th percentile salinity = 10 ppt

(3) 10th percentile D.O. = 4.7 mg/l

| Eggs |   | Hatched |   | 4.4 ft Depth |   | 4.8 ft Depth |   | 5.2 ft Depth |    | 5.6 ft Depth |    | 6.0 ft Depth |    | 6.4 ft Depth |    | 6.8 ft Depth |    | 7.2 ft Depth |    | 7.6 ft Depth |    | 8.0 ft Depth |    | 8.4 ft Depth |    | 8.8 ft Depth |    | 9.2 ft Depth |    | 9.6 ft Depth |    | 10.0 ft Depth |    | 10.4 ft Depth |    | 10.8 ft Depth |    | 11.2 ft Depth |    | 11.6 ft Depth |    | 12.0 ft Depth |    | 12.4 ft Depth |    | 12.8 ft Depth |    | 13.2 ft Depth |    | 13.6 ft Depth |    | 14.0 ft Depth |    | 14.4 ft Depth |    | 14.8 ft Depth |    | 15.2 ft Depth |    | 15.6 ft Depth |    | 16.0 ft Depth |    | 16.4 ft Depth |    | 16.8 ft Depth |    | 17.2 ft Depth |    | 17.6 ft Depth |    | 18.0 ft Depth |    | 18.4 ft Depth |    | 18.8 ft Depth |    | 19.2 ft Depth |    | 19.6 ft Depth |    | 20.0 ft Depth |    | 20.4 ft Depth |    | 20.8 ft Depth |    | 21.2 ft Depth |    | 21.6 ft Depth |    | 22.0 ft Depth |    | 22.4 ft Depth |    | 22.8 ft Depth |    | 23.2 ft Depth |     | 23.6 ft Depth |  | 24.0 ft Depth |  | 24.4 ft Depth |  | 24.8 ft Depth |  | 25.2 ft Depth |  | 25.6 ft Depth |  | 26.0 ft Depth |  | 26.4 ft Depth |  | 26.8 ft Depth |  | 27.2 ft Depth |  | 27.6 ft Depth |  | 28.0 ft Depth |  | 28.4 ft Depth |  | 28.8 ft Depth |  | 29.2 ft Depth |  | 29.6 ft Depth |  | 30.0 ft Depth |  | 30.4 ft Depth |  | 30.8 ft Depth |  | 31.2 ft Depth |  | 31.6 ft Depth |  | 32.0 ft Depth |  | 32.4 ft Depth |  | 32.8 ft Depth |  | 33.2 ft Depth |  | 33.6 ft Depth |  | 34.0 ft Depth |  | 34.4 ft Depth |  | 34.8 ft Depth |  | 35.2 ft Depth |  | 35.6 ft Depth |  | 36.0 ft Depth |  | 36.4 ft Depth |  | 36.8 ft Depth |  | 37.2 ft Depth |  | 37.6 ft Depth |  | 38.0 ft Depth |  | 38.4 ft Depth |  | 38.8 ft Depth |  | 39.2 ft Depth |  | 39.6 ft Depth |  | 40.0 ft Depth |  | 40.4 ft Depth |  | 40.8 ft Depth |  | 41.2 ft Depth |  | 41.6 ft Depth |  | 42.0 ft Depth |  | 42.4 ft Depth |  | 42.8 ft Depth |  | 43.2 ft Depth |  | 43.6 ft Depth |  | 44.0 ft Depth |  | 44.4 ft Depth |  | 44.8 ft Depth |  | 45.2 ft Depth |  | 45.6 ft Depth |  | 46.0 ft Depth |  | 46.4 ft Depth |  | 46.8 ft Depth |  | 47.2 ft Depth |  | 47.6 ft Depth |  | 48.0 ft Depth |  | 48.4 ft Depth |  | 48.8 ft Depth |  | 49.2 ft Depth |  | 49.6 ft Depth |  | 50.0 ft Depth |  | 50.4 ft Depth |  | 50.8 ft Depth |  | 51.2 ft Depth |  | 51.6 ft Depth |  | 52.0 ft Depth |  | 52.4 ft Depth |  | 52.8 ft Depth |  | 53.2 ft Depth |  | 53.6 ft Depth |  | 54.0 ft Depth |  | 54.4 ft Depth |  | 54.8 ft Depth |  | 55.2 ft Depth |  |
|------|---|---------|---|--------------|---|--------------|---|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|-----|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|---------------|--|
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
| 1    | 2 | 3       | 4 | 5            | 6 | 7            | 8 | 9            | 10 | 11           | 12 | 13           | 14 | 15           | 16 | 17           | 18 | 19           | 20 | 21           | 22 | 23           | 24 | 25           | 26 | 27           | 28 | 29           | 30 | 31           | 32 | 33            | 34 | 35            | 36 | 37            | 38 | 39            | 40 | 41            | 42 | 43            | 44 | 45            | 46 | 47            | 48 | 49            | 50 | 51            | 52 | 53            | 54 | 55            | 56 | 57            | 58 | 59            | 60 | 61            | 62 | 63            | 64 | 65            | 66 | 67            | 68 | 69            | 70 | 71            | 72 | 73            | 74 | 75            | 76 | 77            | 78 | 79            | 80 | 81            | 82 | 83            | 84 | 85            | 86 | 87            | 88 | 89            | 90 | 91            | 92 | 93            | 94 | 95            | 96 | 97            | 98 | 99            | 100 |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |               |  |
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| Source Columns |   | Run No. 44 Depth |   |   |   |   |   |   |    |    |    | Run No. 45 Depth |    |    |    |    |    |    |    |    |    | Run No. 46 Depth |    |    |    |    |    |    |    |    |    | Run No. 47 Depth |    |    |    |    |    |    |    |    |    | Run No. 48 Depth |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|----------------|---|------------------|---|---|---|---|---|---|----|----|----|------------------|----|----|----|----|----|----|----|----|----|------------------|----|----|----|----|----|----|----|----|----|------------------|----|----|----|----|----|----|----|----|----|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1              | 2 | 3                | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13               | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23               | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33               | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43               | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
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| 1              | 2 | 3                | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13               | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23               | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33               | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43               | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 1              | 2 | 3                | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13               | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23               | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33               | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43               | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |

Striped Bass - Eggs

50th percentile APRIL 2006

Subsidiary Hospital when

7) Molar % of permeable solute = 5 mol

(7) Mean velocity = 0.30 cm/s; and  
(8) Mean discharge is 13.3 m<sup>3</sup>/s.

[illegible]

# Striped Bass - Eggs

50th percentile AFPL Rows

Source: Natural Resources Canada  
 (1) Mean 50th percentile safety is 3.0%  
 (2) 50th percentile safety is 3.0%  
 (3) 50th percentile safety is 3.0%

| Eggs Conditions |   |   |   |   |   |   |   |   |    | Par. 6b, 4.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 6.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 8.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 10.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 12.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 14.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 16.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 18.1 ft Depth |    |    |    |    |    |    |    |    |    | Par. 6b, 20.1 ft Depth |    |    |    |    |    |    |    |    |     | Par. 6b, 22.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 24.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 26.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 28.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 30.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 32.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 34.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 36.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 38.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 40.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 42.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 44.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 46.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 48.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 50.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 52.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 54.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 56.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 58.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 60.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 62.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 64.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 66.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 68.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 70.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 72.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 74.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 76.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 78.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 80.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 82.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 84.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 86.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 88.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 90.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 92.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 94.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 96.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 98.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 100.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 102.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 104.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 106.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 108.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 110.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 112.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 114.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 116.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 118.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 120.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 122.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 124.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 126.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 128.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 130.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 132.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 134.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 136.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 138.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 140.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 142.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 144.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 146.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 148.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 150.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 152.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 154.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 156.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 158.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 160.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 162.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 164.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 166.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 168.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 170.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 172.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 174.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 176.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 178.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 180.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 182.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 184.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 186.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 188.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 190.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 192.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 194.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 196.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 198.1 ft Depth |     |     |     |     |     |     |     |     |     | Par. 6b, 200.1 ft Depth |     |     |     |     |     |     |     |     |      | Par. 6b, 202.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 204.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 206.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 208.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 210.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 212.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 214.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 216.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 218.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 220.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 222.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 224.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 226.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 228.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 230.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 232.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 234.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 236.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 238.1 ft Depth |      |      |      |      |      |      |      |      |      | Par. 6b, 240.1 ft Depth |      |      |      |      |      |      |      |  |  |
|-----------------|---|---|---|---|---|---|---|---|----|-----------------------|----|----|----|----|----|----|----|----|----|-----------------------|----|----|----|----|----|----|----|----|----|-----------------------|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|----|----|----|----|----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-----|---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| 1               | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11                    | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21                    | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31                    | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41                     | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51                     | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61                     | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71                     | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81                     | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91                     | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101                    | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111                    | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121                    | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131                    | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141                    | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151                    | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161                    | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171                    | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 | 181                    | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191                    | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201                    | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211                    | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221                    | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231                    | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | 241                    | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251                    | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261                    | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271                    | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | 281                    | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291                    | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301                    | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311                    | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321                    | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331                    | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341                    | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351                    | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361                    | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371                    | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381                    | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391                    | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401                    | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411                    | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421                    | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431                    | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441                    | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451                    | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461                    | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471                    | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481                    | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491                     | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501                     | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511                     | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521                     | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531                     | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 | 541                     | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551                     | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 | 561                     | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571                     | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 | 581                     | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591                     | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 | 601                     | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611                     | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621                     | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631                     | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 | 641                     | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651                     | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 | 661                     | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671                     | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 | 681                     | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691                     | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701                     | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711                     | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721                     | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731                     | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 | 741                     | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751                     | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 | 761                     | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771                     | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 | 781                     | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791                     | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 | 801                     | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811                     | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 | 821                     | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831                     | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 | 841                     | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851                     | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861                     | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871                     | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881                     | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891                     | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901                     | 902 | 903 | 904 | 905 | 906 | 907 | 908 | 909 | 910 | 911                     | 912 | 913 | 914 | 915 | 916 | 917 | 918 | 919 | 920 | 921                     | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931                     | 932 | 933 | 934 | 935 | 936 | 937 | 938 | 939 | 940 | 941                     | 942 | 943 | 944 | 945 | 946 | 947 | 948 | 949 | 950 | 951                     | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961                     | 962 | 963 | 964 | 965 | 966 | 967 | 968 | 969 | 970 | 971                     | 972 | 973 | 974 | 975 | 976 | 977 | 978 | 979 | 980 | 981                     | 982 | 983 | 984 | 985 | 986 | 987 | 988 | 989 | 990 | 991                     | 992 | 993 | 994 | 995 | 996 | 997 | 998 | 999 | 1000 | 1001                    | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | 1009 | 1010 | 1011                    | 1012 | 1013 | 1014 | 1015 | 1016 | 1017 | 1018 | 1019 | 1020 | 1021                    | 1022 | 1023 | 1024 | 1025 | 1026 | 1027 | 1028 | 1029 | 1030 | 1031                    | 1032 | 1033 | 1034 | 1035 | 1036 | 1037 | 1038 | 1039 | 1040 | 1041                    | 1042 | 1043 | 1044 | 1045 | 1046 | 1047 | 1048 | 1049 | 1050 | 1051                    | 1052 | 1053 | 1054 | 1055 | 1056 | 1057 | 1058 | 1059 | 1060 | 1061                    | 1062 | 1063 | 1064 | 1065 | 1066 | 1067 | 1068 | 1069 | 1070 | 1071                    | 1072 | 1073 | 1074 | 1075 | 1076 | 1077 | 1078 | 1079 | 1080 | 1081                    | 1082 | 1083 | 1084 | 1085 | 1086 | 1087 | 1088 | 1089 | 1090 | 1091                    | 1092 | 1093 | 1094 | 1095 | 1096 | 1097 | 1098 | 1099 | 1100 | 1101                    | 1102 | 1103 | 1104 | 1105 | 1106 | 1107 | 1108 | 1109 | 1110 | 1111                    | 1112 | 1113 | 1114 | 1115 | 1116 | 1117 | 1118 | 1119 | 1120 | 1121                    | 1122 | 1123 | 1124 | 1125 | 1126 | 1127 | 1128 | 1129 | 1130 | 1131                    | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 | 1141                    | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | 1150 | 1151                    | 1152 | 1153 | 1154 | 1155 | 1156 | 1157 | 1158 | 1159 | 1160 | 1161                    | 1162 | 1163 | 1164 | 1165 | 1166 | 1167 | 1168 | 1169 | 1170 | 1171                    | 1172 | 1173 | 1174 | 1175 | 1176 | 1177 | 1178 | 1179 | 1180 | 1181                    | 1182 | 1183 | 1184 | 1185 | 1186 | 1187 | 1188 | 1189 | 1190 | 1191                    | 1192 | 1193 | 1194 | 1195 | 1196 | 1197 | 1198 |  |  |



Striped Bass - E

Know Your Own Mind

Qualitative feedback obtained

(1) Mean: 50th percentile salinity = 9 ppt

(2) Mean velocity  $\approx 20$  cm/s, and[illegible]

77. Mean velocity of 30 cm/s and 10% permeable D.C. = 4.9 mph

[illegible]

Striped Bass - Eggs

BRUCE TILDEY @NCSU0101

Evolutionary Psychology Review

(1) Mean 50th percentile activity = 6 kcal.

(2) Mean velocity  $\approx 30$   
(3) 1976 density  $\approx 1.5$ [illegible]







# Striped Bass - Eggs

80% percentiles APRIL News

Suzanne Isgrig et al.

(1) Mean 50% percent safety = 0.1 (M)

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| Country |   | Region |   | City |   | District |   | Ward |   | Sub Ward |   | Village |   | Hamlet |   | Group |   | Type |   | Status |   | Notes |   | Remarks |   | Comments |   | Details |   | Info |   | Data |   | Meta |   | Extra |   | Footer |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
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## Shipped Bass - Eggs

80th percentile APRIL, May

Susable total area

1) Mean 50th percentile 2) 80th percentile 3) 90th percentile

| Estimate Conditions |                 |                 |                 |                 |                 |                 |                 |                 |                 | Pen 44 ft Depth |                 |                 |                 |                 |                 |                 |                 |                 |                 | Pen 45 ft Depth |                 |                 |                 |                 |                 |                 |                 |                 |                 | Pen 46 ft Depth |                 |                 |                 |                 |                 |                 |                 |                 |                 | Pen 47 ft Depth |                 |                 |                 |                 |                 |                 |                 |                 |                 | Pen 48 ft Depth |                 |                 |                 |                 |      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                |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |               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| Estimate            | Pen 44 ft Depth | Pen 45 ft Depth | Pen 46 ft Depth | Pen 47 ft Depth | Pen 48 ft Depth | Pen 49 ft Depth | Pen 50 ft Depth | Pen 51 ft Depth | Pen 52 ft Depth | Pen 53 ft Depth | Pen 54 ft Depth | Pen 55 ft Depth | Pen 56 ft Depth | Pen 57 ft Depth | Pen 58 ft Depth | Pen 59 ft Depth | Pen 60 ft Depth | Pen 61 ft Depth | Pen 62 ft Depth | Pen 63 ft Depth | Pen 64 ft Depth | Pen 65 ft Depth | Pen 66 ft Depth | Pen 67 ft Depth | Pen 68 ft Depth | Pen 69 ft Depth | Pen 70 ft Depth | Pen 71 ft Depth | Pen 72 ft Depth | Pen 73 ft Depth | Pen 74 ft Depth | Pen 75 ft Depth | Pen 76 ft Depth | Pen 77 ft Depth | Pen 78 ft Depth | Pen 79 ft Depth | Pen 80 ft Depth | Pen 81 ft Depth | Pen 82 ft Depth | Pen 83 ft Depth | Pen 84 ft Depth | Pen 85 ft Depth | Pen 86 ft Depth | Pen 87 ft Depth | Pen 88 ft Depth | Pen 89 ft Depth | Pen 90 ft Depth | Pen 91 ft Depth | Pen 92 ft Depth | Pen 93 ft Depth | Pen 94 ft Depth | Pen 95 ft Depth | Pen 96 ft Depth | Pen 97 ft Depth | Pen 98 ft Depth | Pen 99 ft Depth | Pen 100 ft Depth | Pen 101 ft Depth | Pen 102 ft Depth | Pen 103 ft Depth | Pen 104 ft Depth | Pen 105 ft Depth | Pen 106 ft Depth | Pen 107 ft Depth | Pen 108 ft Depth | Pen 109 ft Depth | Pen 110 ft Depth | Pen 111 ft Depth | Pen 112 ft Depth | Pen 113 ft Depth | Pen 114 ft Depth | Pen 115 ft Depth | Pen 116 ft Depth | Pen 117 ft Depth | Pen 118 ft Depth | Pen 119 ft Depth | Pen 120 ft Depth | Pen 121 ft Depth | Pen 122 ft Depth | Pen 123 ft Depth | Pen 124 ft Depth | Pen 125 ft Depth | Pen 126 ft Depth | Pen 127 ft Depth | Pen 128 ft Depth | Pen 129 ft Depth | Pen 130 ft Depth | Pen 131 ft Depth | Pen 132 ft Depth | Pen 133 ft Depth | Pen 134 ft Depth | Pen 135 ft Depth | Pen 136 ft Depth | Pen 137 ft Depth | Pen 138 ft Depth | Pen 139 ft Depth | Pen 140 ft Depth | Pen 141 ft Depth | Pen 142 ft Depth | Pen 143 ft Depth | Pen 144 ft Depth | Pen 145 ft Depth | Pen 146 ft Depth | Pen 147 ft Depth | Pen 148 ft Depth | Pen 149 ft Depth | Pen 150 ft Depth | Pen 151 ft Depth | Pen 152 ft Depth | Pen 153 ft Depth | Pen 154 ft Depth | Pen 155 ft Depth | Pen 156 ft Depth | Pen 157 ft Depth | Pen 158 ft Depth | Pen 159 ft Depth | Pen 160 ft Depth | Pen 161 ft Depth | Pen 162 ft Depth | Pen 163 ft Depth | Pen 164 ft Depth | Pen 165 ft Depth | Pen 166 ft Depth | Pen 167 ft Depth | Pen 168 ft Depth | Pen 169 ft Depth | Pen 170 ft Depth | Pen 171 ft Depth | Pen 172 ft Depth | Pen 173 ft Depth | Pen 174 ft Depth | Pen 175 ft Depth | Pen 176 ft Depth | Pen 177 ft Depth | Pen 178 ft Depth | Pen 179 ft Depth | Pen 180 ft Depth | Pen 181 ft Depth | Pen 182 ft Depth | Pen 183 ft Depth | Pen 184 ft Depth | Pen 185 ft Depth | Pen 186 ft Depth | Pen 187 ft Depth | Pen 188 ft Depth | Pen 189 ft Depth | Pen 190 ft Depth | Pen 191 ft Depth | Pen 192 ft Depth | Pen 193 ft Depth | Pen 194 ft Depth | Pen 195 ft Depth | Pen 196 ft Depth | Pen 197 ft Depth | Pen 198 ft Depth | Pen 199 ft Depth | Pen 200 ft Depth | Pen 201 ft Depth | Pen 202 ft Depth | Pen 203 ft Depth | Pen 204 ft Depth | Pen 205 ft Depth | Pen 206 ft Depth | Pen 207 ft Depth | Pen 208 ft Depth | Pen 209 ft Depth | Pen 210 ft Depth | Pen 211 ft Depth | Pen 212 ft Depth | Pen 213 ft Depth | Pen 214 ft Depth | Pen 215 ft Depth | Pen 216 ft Depth | Pen 217 ft Depth | Pen 218 ft Depth | Pen 219 ft Depth | Pen 220 ft Depth | Pen 221 ft Depth | Pen 222 ft Depth | Pen 223 ft Depth | Pen 224 ft Depth | Pen 225 ft Depth | Pen 226 ft Depth | Pen 227 ft Depth | Pen 228 ft Depth | Pen 229 ft Depth | Pen 230 ft Depth | Pen 231 ft Depth | Pen 232 ft Depth | Pen 233 ft Depth | Pen 234 ft Depth | Pen 235 ft Depth | Pen 236 ft Depth | Pen 237 ft Depth | Pen 238 ft Depth | Pen 239 ft Depth | Pen 240 ft Depth | Pen 241 ft Depth | Pen 242 ft Depth | Pen 243 ft Depth | Pen 244 ft Depth | Pen 245 ft Depth | Pen 246 ft Depth | Pen 247 ft Depth | Pen 248 ft Depth | Pen 249 ft Depth | Pen 250 ft Depth | Pen 251 ft Depth | Pen 252 ft Depth | Pen 253 ft Depth | Pen 254 ft Depth | Pen 255 ft Depth | Pen 256 ft Depth | Pen 257 ft Depth | Pen 258 ft Depth | Pen 259 ft Depth | Pen 260 ft Depth | Pen 261 ft Depth | Pen 262 ft Depth | Pen 263 ft Depth | Pen 264 ft Depth | Pen 265 ft Depth | Pen 266 ft Depth | Pen 267 ft Depth | Pen 268 ft Depth | Pen 269 ft Depth | Pen 270 ft Depth | Pen 271 ft Depth | Pen 272 ft Depth | Pen 273 ft Depth | Pen 274 ft Depth | Pen 275 ft Depth | Pen 276 ft Depth | Pen 277 ft Depth | Pen 278 ft Depth | Pen 279 ft Depth | Pen 280 ft Depth | Pen 281 ft Depth | Pen 282 ft Depth | Pen 283 ft Depth | Pen 284 ft Depth | Pen 285 ft Depth | Pen 286 ft Depth | Pen 287 ft Depth | Pen 288 ft Depth | Pen 289 ft Depth | Pen 290 ft Depth | Pen 291 ft Depth | Pen 292 ft Depth | Pen 293 ft Depth | Pen 294 ft Depth | Pen 295 ft Depth | Pen 296 ft Depth | Pen 297 ft Depth | Pen 298 ft Depth | Pen 299 ft Depth | Pen 300 ft Depth | Pen 301 ft Depth | Pen 302 ft Depth | Pen 303 ft Depth | Pen 304 ft Depth | Pen 305 ft Depth | Pen 306 ft Depth | Pen 307 ft Depth | Pen 308 ft Depth | Pen 309 ft Depth | Pen 310 ft Depth | Pen 311 ft Depth | Pen 312 ft Depth | Pen 313 ft Depth | Pen 314 ft Depth | Pen 315 ft Depth | Pen 316 ft Depth | Pen 317 ft Depth | Pen 318 ft Depth | Pen 319 ft Depth | Pen 320 ft Depth | Pen 321 ft Depth | Pen 322 ft Depth | Pen 323 ft Depth | Pen 324 ft Depth | Pen 325 ft Depth | Pen 326 ft Depth | Pen 327 ft Depth | Pen 328 ft Depth | Pen 329 ft Depth | Pen 330 ft Depth | Pen 331 ft Depth | Pen 332 ft Depth | Pen 333 ft Depth | Pen 334 ft Depth | Pen 335 ft Depth | Pen 336 ft Depth | Pen 337 ft Depth | Pen 338 ft Depth | Pen 339 ft Depth | Pen 340 ft Depth | Pen 341 ft Depth | Pen 342 ft Depth | Pen 343 ft Depth | Pen 344 ft Depth | Pen 345 ft Depth | Pen 346 ft Depth | Pen 347 ft Depth | Pen 348 ft Depth | Pen 349 ft Depth | Pen 350 ft Depth | Pen 351 ft Depth | Pen 352 ft Depth | Pen 353 ft Depth | Pen 354 ft Depth | Pen 355 ft Depth | Pen 356 ft Depth | Pen 357 ft Depth | Pen 358 ft Depth | Pen 359 ft Depth | Pen 360 ft Depth | Pen 361 ft Depth | Pen 362 ft Depth | Pen 363 ft Depth | Pen 364 ft Depth | Pen 365 ft Depth | Pen 366 ft Depth | Pen 367 ft Depth | Pen 368 ft Depth | Pen 369 ft Depth | Pen 370 ft Depth | Pen 371 ft Depth | Pen 372 ft Depth | Pen 373 ft Depth | Pen 374 ft Depth | Pen 375 ft Depth | Pen 376 ft Depth | Pen 377 ft Depth | Pen 378 ft Depth | Pen 379 ft Depth | Pen 380 ft Depth | Pen 381 ft Depth | Pen 382 ft Depth | Pen 383 ft Depth | Pen 384 ft Depth | Pen 385 ft Depth | Pen 386 ft Depth | Pen 387 ft Depth | Pen 388 ft Depth | Pen 389 ft Depth | Pen 390 ft Depth | Pen 391 ft Depth | Pen 392 ft Depth | Pen 393 ft Depth | Pen 394 ft Depth | Pen 395 ft Depth | Pen 396 ft Depth | Pen 397 ft Depth | Pen 398 ft Depth | Pen 399 ft Depth | Pen 400 ft Depth | Pen 401 ft Depth | Pen 402 ft Depth | Pen 403 ft Depth | Pen 404 ft Depth | Pen 405 ft Depth | Pen 406 ft Depth | Pen 407 ft Depth | Pen 408 ft Depth | Pen 409 ft Depth | Pen 410 ft Depth | Pen 411 ft Depth | Pen 412 ft Depth | Pen 413 ft Depth | Pen 414 ft Depth | Pen 415 ft Depth | Pen 416 ft Depth | Pen 417 ft Depth | Pen 418 ft Depth | Pen 419 ft Depth | Pen 420 ft Depth | Pen 421 ft Depth | Pen 422 ft Depth | Pen 423 ft Depth | Pen 424 ft Depth | Pen 425 ft Depth | Pen 426 ft Depth | Pen 427 ft Depth | Pen 428 ft Depth | Pen 429 ft Depth | Pen 430 ft Depth | Pen 431 ft Depth | Pen 432 ft Depth | Pen 433 ft Depth | Pen 434 ft Depth | Pen 435 ft Depth | Pen 436 ft Depth | Pen 437 ft Depth | Pen 438 ft Depth | Pen 439 ft Depth | Pen 440 ft Depth | Pen 441 ft Depth | Pen 442 ft Depth | Pen 443 ft Depth | Pen 444 ft Depth | Pen 445 ft Depth | Pen 446 ft Depth | Pen 447 ft Depth | Pen 448 ft Depth | Pen 449 ft Depth | Pen 450 ft Depth | Pen 451 ft Depth | Pen 452 ft Depth | Pen 453 ft Depth | Pen 454 ft Depth | Pen 455 ft Depth | Pen 456 ft Depth | Pen 457 ft Depth | Pen 458 ft Depth | Pen 459 ft Depth | Pen 460 ft Depth | Pen 461 ft Depth | Pen 462 ft Depth | Pen 463 ft Depth | Pen 464 ft Depth | Pen 465 ft Depth | Pen 466 ft Depth | Pen 467 ft Depth | Pen 468 ft Depth | Pen 469 ft Depth | Pen 470 ft Depth | Pen 471 ft Depth | Pen 472 ft Depth | Pen 473 ft Depth | Pen 474 ft Depth | Pen 475 ft Depth | Pen 476 ft Depth | Pen 477 ft Depth | Pen 478 ft Depth | Pen 479 ft Depth | Pen 480 ft Depth | Pen 481 ft Depth | Pen 482 ft Depth | Pen 483 ft Depth | Pen 484 ft Depth | Pen 485 ft Depth | Pen 486 ft Depth | Pen 487 ft Depth | Pen 488 ft Depth | Pen 489 ft Depth | Pen 490 ft Depth | Pen 491 ft Depth | Pen 492 ft Depth | Pen 493 ft Depth | Pen 494 ft Depth | Pen 495 ft Depth | Pen 496 ft Depth | Pen 497 ft Depth | Pen 498 ft Depth | Pen 499 ft Depth | Pen 500 ft Depth | Pen 501 ft Depth | Pen 502 ft Depth | Pen 503 ft Depth | Pen 504 ft Depth | Pen 505 ft Depth | Pen 506 ft Depth | Pen 507 ft Depth | Pen 508 ft Depth | Pen 509 ft Depth | Pen 510 ft Depth | Pen 511 ft Depth | Pen 512 ft Depth | Pen 513 ft Depth | Pen 514 ft Depth | Pen 515 ft Depth | Pen 516 ft Depth | Pen 517 ft Depth | Pen 518 ft Depth | Pen 519 ft Depth | Pen 520 ft Depth | Pen 521 ft Depth | Pen 522 ft Depth | Pen 523 ft Depth | Pen 524 ft Depth | Pen 525 ft Depth | Pen 526 ft Depth | Pen 527 ft Depth | Pen 528 ft Depth | Pen 529 ft Depth | Pen 530 ft Depth | Pen 531 ft Depth | Pen 532 ft Depth | Pen 533 ft Depth | Pen 534 ft Depth | Pen 535 ft Depth | Pen 536 ft Depth | Pen 537 ft Depth | Pen 538 ft Depth | Pen 539 ft Depth | Pen 540 ft Depth | Pen 541 ft Depth | Pen 542 ft Depth | Pen 543 ft Depth | Pen 544 ft Depth | Pen 545 ft Depth | Pen 546 ft Depth | Pen 547 ft Depth | Pen 548 ft Depth | Pen 549 ft Depth | Pen 550 ft Depth | Pen 551 ft Depth | Pen 552 ft Depth | Pen 553 ft Depth | Pen 554 ft Depth | Pen 555 ft Depth | Pen 556 ft Depth | Pen 557 ft Depth | Pen 558 ft Depth | Pen 559 ft Depth | Pen 560 ft Depth | Pen 561 ft Depth | Pen 562 ft Depth | Pen 563 ft Depth | Pen 564 ft Depth | Pen 565 ft Depth | Pen 566 ft Depth | Pen 567 ft Depth | Pen 568 ft Depth | Pen 569 ft Depth | Pen 570 ft Depth | Pen 571 ft Depth | Pen 572 ft Depth | Pen 573 ft Depth | Pen 574 ft Depth | Pen 575 ft Depth | Pen 576 ft Depth | Pen 577 ft Depth | Pen 578 ft Depth | Pen 579 ft Depth | Pen 580 ft Depth | Pen 581 ft Depth | Pen 582 ft Depth | Pen 583 ft Depth | Pen 584 ft Depth | Pen 585 ft Depth | Pen 586 ft Depth | Pen 587 ft Depth | Pen 588 ft Depth | Pen 589 ft Depth | Pen 590 ft Depth | Pen 591 ft Depth | Pen 592 ft Depth | Pen 593 ft Depth | Pen 594 ft Depth | Pen 595 ft Depth | Pen 596 ft Depth | Pen 597 ft Depth | Pen 598 ft Depth | Pen 599 ft Depth | Pen 600 ft Depth | Pen 601 ft Depth | Pen 602 ft Depth | Pen 603 ft Depth | Pen 604 ft Depth | Pen 605 ft Depth | Pen 606 ft Depth | Pen 607 ft Depth | Pen 608 ft Depth | Pen 609 ft Depth | Pen 610 ft Depth | Pen 611 ft Depth | Pen 612 ft Depth | Pen 613 ft Depth | Pen 614 ft Depth | Pen 615 ft Depth | Pen 616 ft Depth | Pen 617 ft Depth | Pen 618 ft Depth | Pen 619 ft Depth | Pen 620 ft Depth | Pen 621 ft Depth | Pen 622 ft Depth | Pen 623 ft Depth | Pen 624 ft Depth | Pen 625 ft Depth | Pen 626 ft Depth | Pen 627 ft Depth | Pen 628 ft Depth | Pen 629 ft Depth | Pen 630 ft Depth | Pen 631 ft Depth | Pen 632 ft Depth | Pen 633 ft Depth | Pen 634 ft Depth | Pen 635 ft Depth | Pen 636 ft Depth | Pen 637 ft Depth | Pen 638 ft Depth | Pen 639 ft Depth | Pen 640 ft Depth | Pen 641 ft Depth | Pen 642 ft Depth | Pen 643 ft Depth | Pen 644 ft Depth | Pen 645 ft Depth | Pen 646 ft Depth | Pen 647 ft Depth | Pen 648 ft Depth | Pen 649 ft Depth | Pen 650 ft Depth | Pen 651 ft Depth | Pen 652 ft Depth | Pen 653 ft Depth | Pen 654 ft Depth | Pen 655 ft Depth | Pen 656 ft Depth | Pen 657 ft Depth | Pen 658 ft Depth | Pen 659 ft Depth | Pen 660 ft Depth | Pen 661 ft Depth | Pen 662 ft Depth | Pen 663 ft Depth | Pen 664 ft Depth | Pen 665 ft Depth | Pen 666 ft Depth | Pen 667 ft Depth | Pen 668 ft Depth | Pen 669 ft Depth | Pen 670 ft Depth | Pen 671 ft Depth | Pen 672 ft Depth | Pen 673 ft Depth | Pen 674 ft Depth | Pen 675 ft Depth | Pen 676 ft Depth | Pen 677 ft Depth | Pen 678 ft Depth | Pen 679 ft Depth | Pen 680 ft Depth | Pen 681 ft Depth | Pen 682 ft Depth | Pen 683 ft Depth | Pen 684 ft Depth | Pen 685 ft Depth | Pen 686 ft Depth | Pen 687 ft Depth | Pen 688 ft Depth | Pen 689 ft Depth | Pen 690 ft Depth | Pen 691 ft Depth | Pen 692 ft Depth | Pen 693 ft Depth | Pen 694 ft Depth | Pen 695 ft Depth | Pen 696 ft Depth | Pen 697 ft Depth | Pen 698 ft Depth | Pen 699 ft Depth | Pen 700 ft Depth | Pen 701 ft Depth | Pen 702 ft Depth | Pen 703 ft Depth | Pen 704 ft Depth | Pen 705 ft Depth | Pen 706 ft Depth | Pen 707 ft Depth | Pen 708 ft Depth | Pen 709 ft Depth | Pen 710 ft Depth | Pen 711 ft Depth | Pen 712 ft Depth | Pen 713 ft Depth | Pen 714 ft Depth | Pen 715 ft Depth | Pen 716 ft Depth | Pen 717 ft Depth | Pen 718 ft Depth | Pen 719 ft Depth | Pen 720 ft Depth | Pen 721 ft Depth | Pen 722 ft Depth | Pen 723 ft Depth | Pen 724 ft Depth | Pen 725 ft Depth | Pen 726 ft Depth | Pen 727 ft Depth | Pen 728 ft Depth | Pen 729 ft Depth | Pen 730 ft Depth | Pen 731 ft Depth | Pen 732 ft Depth | Pen 733 ft Depth | Pen 734 ft Depth | Pen 735 ft Depth | Pen 736 ft Depth | Pen 737 ft Depth | Pen 738 ft Depth | Pen 739 ft Depth | Pen 740 ft Depth | Pen 741 ft Depth | Pen 742 ft Depth | Pen 743 ft Depth | Pen 744 ft Depth | Pen 745 ft Depth | Pen 746 ft Depth | Pen 747 ft Depth | Pen 748 ft Depth | Pen 749 ft Depth | Pen 750 ft Depth | Pen 751 ft Depth | Pen 752 ft Depth | Pen 753 ft Depth | Pen 754 ft Depth | Pen 755 ft Depth | Pen 756 ft Depth | Pen 757 ft Depth | Pen 758 ft Depth | Pen 759 ft Depth | Pen 760 ft Depth | Pen 761 ft Depth | Pen 762 ft Depth | Pen 763 ft Depth | Pen 764 ft Depth | Pen 765 ft Depth | Pen 766 ft Depth | Pen 767 ft Depth | Pen 768 ft Depth | Pen 769 ft Depth | Pen 770 ft Depth | Pen 771 ft Depth | Pen 772 ft Depth | Pen 773 ft Depth | Pen 774 ft Depth | Pen 775 ft Depth | Pen 776 ft Depth | Pen 777 ft Depth | Pen 778 ft Depth | Pen 779 ft Depth | Pen 780 ft Depth | Pen 781 ft Depth | Pen 782 ft Depth | Pen 783 ft Depth | Pen 784 ft Depth | Pen 785 ft Depth | Pen 786 ft Depth | Pen 787 ft Depth | Pen 788 ft Depth | Pen 789 ft Depth | Pen 790 ft Depth | Pen 791 ft Depth | Pen 792 ft Depth | Pen 793 ft Depth | Pen 794 ft Depth | Pen 795 ft Depth | Pen 796 ft Depth | Pen 797 ft Depth | Pen 798 ft Depth | Pen 799 ft Depth | Pen 800 ft Depth | Pen 801 ft Depth | Pen 802 ft Depth | Pen 803 ft Depth | Pen 804 ft Depth | Pen 805 ft Depth | Pen 806 ft Depth | Pen 807 ft Depth | Pen 808 ft Depth | Pen 809 ft Depth | Pen 810 ft Depth | Pen 811 ft Depth | Pen 812 ft Depth | Pen 813 ft Depth | Pen 814 ft Depth | Pen 815 ft Depth | Pen 816 ft Depth | Pen 817 ft Depth | Pen 818 ft Depth | Pen 819 ft Depth | Pen 820 ft Depth | Pen 821 ft Depth | Pen 822 ft Depth | Pen 823 ft Depth | Pen 824 ft Depth | Pen 825 ft Depth | Pen 826 ft Depth | Pen 827 ft Depth | Pen 828 ft Depth | Pen 829 ft Depth | Pen 830 ft Depth | Pen 831 ft Depth | Pen 832 ft Depth | Pen 833 ft Depth | Pen 834 ft Depth | Pen 835 ft Depth | Pen 836 ft Depth | Pen 837 ft Depth | Pen 838 ft Depth | Pen 839 ft Depth | Pen 840 ft Depth | Pen 841 ft Depth | Pen 842 ft Depth | Pen 843 ft Depth | Pen 844 ft Depth | Pen 845 ft Depth | Pen 846 ft Depth | Pen 847 ft Depth | Pen 848 ft Depth | Pen 849 ft Depth | Pen 850 ft Depth | Pen 851 ft Depth | Pen 852 ft Depth | Pen 853 ft Depth | Pen 854 ft Depth | Pen 855 ft Depth | Pen 856 ft Depth | Pen 857 ft Depth | Pen 858 ft Depth | Pen 859 ft Depth | Pen 860 ft Depth | Pen 861 ft Depth | Pen 862 ft Depth | Pen 863 ft Depth | Pen 864 ft Depth | Pen 865 ft Depth | Pen 866 ft Depth | Pen 867 ft Depth | Pen 868 ft Depth | Pen 869 ft Depth | Pen 870 ft Depth | Pen 871 ft Depth | Pen 872 ft Depth | Pen 873 ft Depth | Pen 874 ft Depth | Pen 875 ft Depth | Pen 876 ft Depth | Pen 877 ft Depth | Pen 878 ft Depth | Pen 879 ft Depth | Pen 880 ft Depth | Pen 881 ft Depth | Pen 882 ft Depth | Pen 883 ft Depth | Pen 884 ft Depth | Pen 885 ft Depth | Pen 886 ft Depth | Pen 887 ft Depth | Pen 888 ft Depth | Pen 889 ft Depth | Pen 890 ft Depth | Pen 891 ft Depth | Pen 892 ft Depth | Pen 893 ft Depth | Pen 894 ft Depth | Pen 895 ft Depth | Pen 896 ft Depth | Pen 897 ft Depth | Pen 898 ft Depth | Pen 899 ft Depth | Pen 900 ft Depth | Pen 901 ft Depth | Pen 902 ft Depth | Pen 903 ft Depth | Pen 904 ft Depth | Pen 905 ft Depth | Pen 906 ft Depth | Pen 907 ft Depth | Pen 908 ft Depth | Pen 909 ft Depth | Pen 910 ft Depth | Pen 911 ft Depth | Pen 912 ft Depth | Pen 913 ft Depth | Pen 914 ft Depth | Pen 915 ft Depth | Pen 916 ft Depth | Pen 917 ft Depth | Pen 918 ft Depth | Pen 919 ft Depth | Pen 920 ft Depth | Pen 921 ft Depth | Pen 922 ft Depth | Pen 923 ft Depth | Pen 924 ft Depth | Pen 925 ft Depth | Pen 926 ft Depth | Pen 927 ft Depth | Pen 928 ft Depth | Pen 929 ft Depth | Pen 930 ft Depth | Pen 931 ft Depth | Pen 932 ft Depth | Pen 933 ft Depth | Pen 934 ft Depth | Pen 935 ft Depth | Pen 936 ft Depth | Pen 937 ft Depth | Pen 938 ft Depth | Pen 939 ft Depth | Pen 940 ft Depth | Pen 941 ft Depth | Pen 942 ft Depth | Pen 943 ft Depth | Pen 944 ft Depth | Pen 945 ft Depth | Pen 946 ft Depth | Pen 947 ft Depth | Pen 948 ft Depth | Pen 949 ft Depth | Pen 950 ft Depth | Pen 951 ft Depth | Pen 952 ft Depth | Pen 953 ft Depth | Pen 954 ft Depth | Pen 955 ft Depth | Pen 956 ft Depth | Pen 957 ft Depth | Pen 958 ft Depth | Pen 959 ft Depth | Pen 960 ft Depth | Pen 961 ft Depth | Pen 962 ft Depth | Pen 963 ft Depth | Pen 964 ft Depth | Pen 965 ft Depth | Pen 966 ft Depth | Pen 967 ft Depth | Pen 968 ft Depth | Pen 969 ft Depth | Pen 970 ft Depth | Pen 971 ft Depth | Pen 972 ft Depth | Pen 973 ft Depth | Pen 974 ft Depth | Pen 975 ft Depth | Pen 976 ft Depth | Pen 977 ft Depth | Pen 978 ft Depth | Pen 979 ft Depth | Pen 980 ft Depth | Pen 981 ft Depth | Pen 982 ft Depth | Pen 983 ft Depth | Pen 984 ft Depth | Pen 985 ft Depth | Pen 986 ft Depth | Pen 987 ft Depth | Pen 988 ft Depth | Pen 989 ft Depth | Pen 990 ft Depth | Pen 991 ft Depth | Pen 992 ft Depth | Pen 993 ft Depth | Pen 994 ft Depth | Pen 995 ft Depth | Pen 996 ft Depth | Pen 997 ft Depth | Pen 998 ft Depth | Pen 999 ft Depth | Pen 1000 ft Depth |

Striped Bass - Eggs

Figure 1. A schematic diagram of the experimental design.

4) History of the symptoms, including onset of

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[illegible]

















**Striped Bass - Larvae**  
**20th percentile MAY flows**

Stable habitat when  
 Stable with periodic  
 (2) Mean Temperature D.O. >= 4.5 mg/l

| Existing Conditions |  | Months 44 to 47 Death |  | Months 48 to 50 Death |  | Months 51 to 53 Death |  | Months 54 to 56 Death |  | Months 57 to 59 Death |  | Months 60 to 62 Death |  | Months 63 to 65 Death |  | Months 66 to 68 Death |  | Months 69 to 71 Death |  | Months 72 to 74 Death |  | Months 75 to 77 Death |  | Months 78 to 80 Death |  | Months 81 to 83 Death |  | Months 84 to 86 Death |  | Months 87 to 89 Death |  | Months 90 to 92 Death |  | Months 93 to 95 Death |  | Months 96 to 98 Death |  | Months 99 to 101 Death |  | Months 102 to 104 Death |  | Months 105 to 107 Death |  | Months 108 to 110 Death |  | Months 111 to 113 Death |  | Months 114 to 116 Death |  | Months 117 to 119 Death |  | Months 120 to 122 Death |  | Months 123 to 125 Death |  | Months 126 to 128 Death |  | Months 129 to 131 Death |  | Months 132 to 134 Death |  | Months 135 to 137 Death |  | Months 138 to 140 Death |  | Months 141 to 143 Death |  | Months 144 to 146 Death |  | Months 147 to 149 Death |  | Months 150 to 152 Death |  | Months 153 to 155 Death |  | Months 156 to 158 Death |  | Months 159 to 161 Death |  | Months 162 to 164 Death |  | Months 165 to 167 Death |  | Months 168 to 170 Death |  | Months 171 to 173 Death |  | Months 174 to 176 Death |  | Months 177 to 179 Death |  | Months 180 to 182 Death |  | Months 183 to 185 Death |  | Months 186 to 188 Death |  | Months 189 to 191 Death |  | Months 192 to 194 Death |  | Months 195 to 197 Death |  | Months 198 to 200 Death |  | Months 201 to 203 Death |  | Months 204 to 206 Death |  | Months 207 to 209 Death |  | Months 210 to 212 Death |  | Months 213 to 215 Death |  | Months 216 to 218 Death |  | Months 219 to 221 Death |  | Months 222 to 224 Death |  | Months 225 to 227 Death |  | Months 228 to 230 Death |  | Months 231 to 233 Death |  | Months 234 to 236 Death |  | Months 237 to 239 Death |  | Months 240 to 242 Death |  | Months 243 to 245 Death |  | Months 246 to 248 Death |  | Months 249 to 251 Death |  | Months 252 to 254 Death |  | Months 255 to 257 Death |  | Months 258 to 260 Death |  | Months 261 to 263 Death |  | Months 264 to 266 Death |  | Months 267 to 269 Death |  | Months 270 to 272 Death |  | Months 273 to 275 Death |  | Months 276 to 278 Death |  | Months 279 to 281 Death |  | Months 282 to 284 Death |  | Months 285 to 287 Death |  | Months 288 to 290 Death |  | Months 291 to 293 Death |  | Months 294 to 296 Death |  | Months 297 to 299 Death |  | Months 300 to 302 Death |  | Months 303 to 305 Death |  | Months 306 to 308 Death |  | Months 309 to 311 Death |  | Months 312 to 314 Death |  | Months 315 to 317 Death |  | Months 318 to 320 Death |  | Months 321 to 323 Death |  | Months 324 to 326 Death |  | Months 327 to 329 Death |  | Months 330 to 332 Death |  | Months 333 to 335 Death |  | Months 336 to 338 Death |  | Months 339 to 341 Death |  | Months 342 to 344 Death |  | Months 345 to 347 Death |  | Months 348 to 350 Death |  | Months 351 to 353 Death |  | Months 354 to 356 Death |  | Months 357 to 359 Death |  | Months 360 to 362 Death |  | Months 363 to 365 Death |  | Months 366 to 368 Death |  | Months 369 to 371 Death |  | Months 372 to 374 Death |  | Months 375 to 377 Death |  | Months 378 to 380 Death |  | Months 381 to 383 Death |  | Months 384 to 386 Death |  | Months 387 to 389 Death |  | Months 390 to 392 Death |  | Months 393 to 395 Death |  | Months 396 to 398 Death |  | Months 399 to 401 Death |  | Months 402 to 404 Death |  | Months 405 to 407 Death |  | Months 408 to 410 Death |  | Months 411 to 413 Death |  | Months 414 to 416 Death |  | Months 417 to 419 Death |  | Months 420 to 422 Death |  | Months 423 to 425 Death |  | Months 426 to 428 Death |  | Months 429 to 431 Death |  | Months 432 to 434 Death |  | Months 435 to 437 Death |  | Months 438 to 440 Death |  | Months 441 to 443 Death |  | Months 444 to 446 Death |  | Months 447 to 449 Death |  | Months 450 to 452 Death |  | Months 453 to 455 Death |  | Months 456 to 458 Death |  | Months 459 to 461 Death |  | Months 462 to 464 Death |  | Months 465 to 467 Death |  | Months 468 to 470 Death |  | Months 471 to 473 Death |  | Months 474 to 476 Death |  | Months 477 to 479 Death |  | Months 480 to 482 Death |  | Months 483 to 485 Death |  | Months 486 to 488 Death |  | Months 489 to 491 Death |  | Months 492 to 494 Death |  | Months 495 to 497 Death |  | Months 498 to 500 Death |  | Months 501 to 503 Death |  | Months 504 to 506 Death |  | Months 507 to 509 Death |  | Months 510 to 512 Death |  | Months 513 to 515 Death |  | Months 516 to 518 Death |  | Months 519 to 521 Death |  | Months 522 to 524 Death |  | Months 525 to 527 Death |  | Months 528 to 530 Death |  | Months 531 to 533 Death |  | Months 534 to 536 Death |  | Months 537 to 539 Death |  | Months 540 to 542 Death |  | Months 543 to 545 Death |  | Months 546 to 548 Death |  | Months 549 to 551 Death |  | Months 552 to 554 Death |  | Months 555 to 557 Death |  | Months 558 to 560 Death |  | Months 561 to 563 Death |  | Months 564 to 566 Death |  | Months 567 to 569 Death |  | Months 570 to 572 Death |  | Months 573 to 575 Death |  | Months 576 to 578 Death |  | Months 579 to 581 Death |  | Months 582 to 584 Death |  | Months 585 to 587 Death |  | Months 588 to 590 Death |  | Months 591 to 593 Death |  | Months 594 to 596 Death |  | Months 597 to 599 Death |  | Months 600 to 602 Death |  | Months 603 to 605 Death |  | Months 606 to 608 Death |  | Months 609 to 611 Death |  | Months 612 to 614 Death |  | Months 615 to 617 Death |  | Months 618 to 620 Death |  | Months 621 to 623 Death |  | Months 624 to 626 Death |  | Months 627 to 629 Death |  | Months 630 to 632 Death |  | Months 633 to 635 Death |  | Months 636 to 638 Death |  | Months 639 to 641 Death |  | Months 642 to 644 Death |  | Months 645 to 647 Death |  | Months 648 to 650 Death |  | Months 651 to 653 Death |  | Months 654 to 656 Death |  | Months 657 to 659 Death |  | Months 660 to 662 Death |  | Months 663 to 665 Death |  | Months 666 to 668 Death |  | Months 669 to 671 Death |  | Months 672 to 674 Death |  | Months 675 to 677 Death |  | Months 678 to 680 Death |  | Months 681 to 683 Death |  | Months 684 to 686 Death |  | Months 687 to 689 Death |  | Months 690 to 692 Death |  | Months 693 to 695 Death |  | Months 696 to 698 Death |  | Months 699 to 701 Death |  | Months 702 to 704 Death |  | Months 705 to 707 Death |  | Months 708 to 710 Death |  | Months 711 to 713 Death |  | Months 714 to 716 Death |  | Months 717 to 719 Death |  | Months 720 to 722 Death |  | Months 723 to 725 Death |  | Months 726 to 728 Death |  | Months 729 to 731 Death |  | Months 732 to 734 Death |  | Months 735 to 737 Death |  | Months 738 to 740 Death |  | Months 741 to 743 Death |  | Months 744 to 746 Death |  | Months 747 to 749 Death |  | Months 750 to 752 Death |  | Months 753 to 755 Death |  | Months 756 to 758 Death |  | Months 759 to 761 Death |  | Months 762 to 764 Death |  | Months 765 to 767 Death |  | Months 768 to 770 Death |  | Months 771 to 773 Death |  | Months 774 to 776 Death |  | Months 777 to 779 Death |  | Months 780 to 782 Death |  | Months 783 to 785 Death |  | Months 786 to 788 Death |  | Months 789 to 791 Death |  | Months 792 to 794 Death |  | Months 795 to 797 Death |  | Months 798 to 799 Death |  | Months 800 to 801 Death |  | Months 802 to 803 Death |  | Months 804 to 805 Death |  | Months 806 to 807 Death |  | Months 808 to 809 Death |  | Months 810 to 811 Death |  | Months 812 to 813 Death |  | Months 814 to 815 Death |  | Months 816 to 817 Death |  | Months 818 to 819 Death |  | Months 820 to 821 Death |  | Months 822 to 823 Death |  | Months 824 to 825 Death |  | Months 826 to 827 Death |  | Months 828 to 829 Death |  | Months 830 to 831 Death |  | Months 832 to 833 Death |  | Months 834 to 835 Death |  | Months 836 to 837 Death |  | Months 838 to 839 Death |  | Months 840 to 841 Death |  | Months 842 to 843 Death |  | Months 844 to 845 Death |  | Months 846 to 847 Death |  | Months 848 to 849 Death |  | Months 850 to 851 Death |  | Months 852 to 853 Death |  | Months 854 to 855 Death |  | Months 856 to 857 Death |  | Months 858 to 859 Death |  | Months 860 to 861 Death |  | Months 862 to 863 Death |  | Months 864 to 865 Death |  | Months 866 to 867 Death |  | Months 868 to 869 Death |  | Months 870 to 871 Death |  | Months 872 to 873 Death |  | Months 874 to 875 Death |  | Months 876 to 877 Death |  | Months 878 to 879 Death |  | Months 880 to 881 Death |  | Months 882 to 883 Death |  | Months 884 to 885 Death |  | Months 886 to 887 Death |  | Months 888 to 889 Death |  | Months 890 to 891 Death |  | Months 892 to 893 Death |  | Months 894 to 895 Death |  | Months 896 to 897 Death |  | Months 898 to 899 Death |  | Months 900 to 901 Death |  | Months 902 to 903 Death |  | Months 904 to 905 Death |  | Months 906 to 907 Death |  | Months 908 to 909 Death |  | Months 910 to 911 Death |  | Months 912 to 913 Death |  | Months 914 to 915 Death |  | Months 916 to 917 Death |  | Months 918 to 919 Death |  | Months 920 to 921 Death |  | Months 922 to 923 Death |  | Months 924 to 925 Death |  | Months 926 to 927 Death |  | Months 928 to 929 Death |  | Months 930 to 931 Death |  | Months 932 to 933 Death |  | Months 934 to 935 Death |  | Months 936 to 937 Death |  | Months 938 to 939 Death |  | Months 940 to 941 Death |  | Months 942 to 943 Death |  | Months 944 to 945 Death |  | Months 946 to 947 Death |  | Months 948 to 949 Death |  | Months 950 to 951 Death |  | Months 952 to 953 Death |  | Months 954 to 955 Death |  | Months 956 to 957 Death |  | Months 958 to 959 Death |  | Months 960 to 961 Death |  | Months 962 to 963 Death |  | Months 964 to 965 Death |  | Months 966 to 967 Death |  | Months 968 to 969 Death |  | Months 970 to 971 Death |  | Months 972 to 973 Death |  | Months 974 to 975 Death |  | Months 976 to 977 Death |  | Months 978 to 979 Death |  | Months 980 to 981 Death |  | Months 982 to 983 Death |  | Months 984 to 985 Death |  | Months 986 to 987 Death |  | Months 988 to 989 Death |  | Months 990 to 991 Death |  | Months 992 to 993 Death |  | Months 994 to 995 Death |  | Months 996 to 997 Death |  | Months 998 to 999 Death |  | Months 1000 to 1001 Death |  | Months 1002 to 1003 Death |  | Months 1004 to 1005 Death |  | Months 1006 to 1007 Death |  | Months 1008 to 1009 Death |  | Months 1010 to 1011 Death |  | Months 1012 to 1013 Death |  | Months 1014 to 1015 Death |  | Months 1016 to 1017 Death |  | Months 1018 to 1019 Death |  | Months 1020 to 1021 Death |  | Months 1022 to 1023 Death |  | Months 1024 to 1025 Death |  | Months 1026 to 1027 Death |  | Months 1028 to 1029 Death |  | Months 1030 to 1031 Death |  | Months 1032 to 1033 Death |  | Months 1034 to 1035 Death |  | Months 1036 to 1037 Death |  | Months 1038 to 1039 Death |  | Months 1040 to 1041 Death |  | Months 1042 to 1043 Death |  | Months 1044 to 1045 Death |  | Months 1046 to 1047 Death |  | Months 1048 to 1049 Death |  | Months 1050 to 1051 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| Months 1116 to 1117 Death |  | Months 1118 to 1119 Death |  | Months 1120 to 1121 Death |  | Months 1122 to 1123 Death |  | Months 1124 to 1125 Death |  | Months 1126 to 1127 Death |  | Months 1128 to 1129 Death |  | Months 1130 to 1131 Death |  | Months 1132 to 1133 Death |  | Months 1134 to 1135 Death |  | Months 1136 to 1137 Death |  | Months 1138 to 1139 Death |  | Months 1140 to 1141 Death |  | Months 1142 to 1143 Death |  | Months 1144 to 1145 Death |  | Months 1146 to 1147 Death |  | Months 1148 to 1149 Death |  | Months 1150 to 1151 Death |  | Months 1152 to 1153 Death |  | Months 1154 to 1155 Death |  | Months 1156 to 1157 Death |  | Months 1158 to 1159 Death |  | Months 1160 to 1161 Death |  | Months 1162 to 1163 Death |  | Months 1164 to 1165 Death |  | Months 1166 to 1167 Death |  | Months 1168 to 1169 Death |  | Months 1170 to 1171 Death |  | Months 1172 to 1173 Death |  | Months 1174 to 1175 Death |  | Months 1176 to 1177 Death |  | Months 1178 to 1179 Death |  | Months 1180 to 1181 Death |  | Months 1182 to 1183 Death |  | Months 1184 to 1185 Death |  | Months 1186 to 1187 Death |  | Months 1188 to 1189 Death |  | Months 1190 to 1191 Death |  | Months 1192 to 1193 Death |  | Months 1194 to 1195 Death |  | Months 1196 to 1197 Death |  | Months 1198 to 1199 Death |  | Months 1200 to 1201 Death |  | Months 1202 to 1203 Death |  | Months 1204 to 1205 Death |  | Months 1206 to 1207 Death |  | Months 1208 to 1209 Death |  | Months 1210 to 1211 Death |  | Months 1212 to 1213 Death |  | Months 1214 to 1215 Death |  | Months 1216 to 1217 Death |  | Months 1218 to 1219 Death |  | Months 1220 to 1221 Death |  | Months 1222 to 1223 Death |  | Months 1224 to 1225 Death |  | Months 1226 to 1227 Death |  | Months 1228 to 1229 Death |  | Months 1230 to 1231 Death |  | Months 1232 to 1233 Death |  | Months 1234 to 1235 Death |  | Months 1236 to 1237 Death |  | Months 1238 to 1239 Death |  | Months 1240 to 1241 Death |  | Months 1242 to 1243 Death |  | Months 1244 to 1245 Death |  | Months 1246 to 1247 Death |  | Months 1248 to 1249 Death |  | Months 1250 to 1251 Death |  | Months 1252 to 1253 Death |  | Months 1254 to 1255 Death |  | Months 1256 to 1257 Death |  | Months 1258 to 1259 Death |  | Months 1260 to 1261 Death |  | Months 1262 to 1263 Death |  | Months 1264 to 1265 Death |  | Months 1266 to 1267 Death |  | Months 1268 to 1269 Death |  | Months 1270 to 1271 Death |  | Months 1272 to 1273 Death |  | Months 1274 to 1275 Death |  | Months 1276 to 1277 Death |  | Months 1278 to 1279 Death |  | Months 1280 to 1281 Death |  | Months 1282 to 1283 Death |  | Months 1284 to 1285 Death |  | Months 1286 to 1287 Death |  | Months 1288 to 1289 Death |  | Months 1290 to 1291 Death |  | Months 1292 to 1293 Death |  | Months 1294 to 1295 Death |  | Months 1296 to 1297 Death |  | Months 1298 to 1299 Death |  | Months 1300 to 1301 Death |  | Months 1302 to 1303 Death |  | Months 1304 to 1305 Death |  | Months 1306 to 1307 Death |  | Months 1308 to 1309 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| Months 1374 to 1375 Death |  | Months 1376 to 1377 Death |  | Months 1378 to 1379 Death |  | Months 1380 to 1381 Death |  | Months 1382 to 1383 Death |  | Months 1384 to 1385 Death |  | Months 1386 to 1387 Death |  | Months 1388 to 1389 Death |  | Months 1390 to 1391 Death |  | Months 1392 to 1393 Death |  | Months 1394 to 1395 Death |  | Months 1396 to 1397 Death |  | Months 1398 to 1399 Death |  | Months 1400 to 1401 Death |  | Months 1402 to 1403 Death |  | Months 1404 to 1405 Death |  | Months 1406 to 1407 Death |  | Months 1408 to 1409 Death |  | Months 1410 to 1411 Death |  | Months 1412 to 1413 Death |  | Months 1414 to 1415 Death |  | Months 1416 to 1417 Death |  | Months 1418 to 1419 Death |  | Months 1420 to 1421 Death |  | Months 1422 to 1423 Death |  | Months 1424 to 1425 Death |  | Months 1426 to 1427 Death |  | Months 1428 to 1429 Death |  | Months 1430 to 1431 Death |  | Months 1432 to 1433 Death |  | Months 1434 to 1435 Death |  | Months 1436 to 1437 Death |  | Months 1438 to 1439 Death |  | Months 1440 to 1441 Death |  | Months 1442 to 1443 Death |  | Months 1444 to 1445 Death |  | Months 1446 to 1447 Death |  | Months 1448 to 1449 Death |  | Months 1450 to 1451 Death |  | Months 1452 to 1453 Death |  | Months 1454 to 1455 Death |  | Months 1456 to 1457 Death |  | Months 1458 to 1459 Death |  | Months 1460 to 1461 Death |  | Months 1462 to 1463 Death |  | Months 1464 to 1465 Death |  | Months 1466 to 1467 Death |  | Months 1468 to 1469 Death |  | Months 1470 to 1471 Death |  | Months 1472 to 1473 Death |  | Months 1474 to 1475 Death |  | Months 1476 to 1477 Death |  | Months 1478 to 1479 Death |  | Months 1480 to 1481 Death |  | Months 1482 to 1483 Death |  | Months 1484 to 1485 Death |  | Months 1486 to 1487 Death |  | Months 1488 to 1489 Death |  | Months 1490 to 1491 Death |  | Months 1492 to 1493 Death |  | Months 1494 to 1495 Death |  | Months 1496 to 1497 Death |  | Months 1498 to 1499 Death |  | Months 1500 to 1501 Death |  | Months 1502 to 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Striped Bass - Larvae  
20th percentile MAY flows

Sublethal halibut when

- (1) Mean 50m permeon salinity between 2 and 8 ppt, and
- (2) Mean 10m percentile D.O. >= 4.3 mg/l

| Existing Conditions |                             | Planck 44 ft Depth        |           | Planck 45 ft Depth        |           | Planck 46 ft Depth        |           | Planck 47 ft Depth        |           | Planck 48 ft Depth        |           |
|---------------------|-----------------------------|---------------------------|-----------|---------------------------|-----------|---------------------------|-----------|---------------------------|-----------|---------------------------|-----------|
| L.C.                | USEX201 (DOM20) EXISTING201 | USEX201 (DOM20) PLANCK201 | CHANGE201 | USEX201 (DOM20) PLANCK201 | CHANGE201 | USEX201 (DOM20) PLANCK201 | CHANGE201 | USEX201 (DOM20) PLANCK201 | CHANGE201 | USEX201 (DOM20) PLANCK201 | CHANGE201 |
| 13 131              | Fail                        | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 132              | Fail                        | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 133              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 134              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 135              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 136              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 137              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 138              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 139              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 140              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 141              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 142              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 143              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 144              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 145              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 146              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 147              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 148              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 149              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |
| 13 150              | Fail                        | Pass                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      | Fail                      | same      |





















**Striped Bass - Larvae**  
**50th percentile MAY flows**

Suitable habitat when  
 1) Mean 50th percentile density between 3 and 8 ppt, and  
 2) Mean 10th percentile D.O. >= 6.2 mg/l

| L      | Existing Conditions |          | Plants 44 ft Depth |          | Plants 46 ft Depth |          | Plants 48 ft Depth |          | Plants 47 ft Depth |          | Plants 48 ft Depth |          |
|--------|---------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|--------------------|----------|
|        | WATER               | EXISTING | WATER              | EXISTING | WATER              | EXISTING | WATER              | EXISTING | WATER              | EXISTING | WATER              | EXISTING |
| 11 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 11 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 12 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 12 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 13 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 13 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 130 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 131 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 131 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 131 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 131 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 132 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 132 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 132 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 132 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 132 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 132 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 134 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 23 134 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 135 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 135 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 135 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |
| 14 135 | Fail                | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     | Fail               | Fail     |

















**Striped Bass - Larvae**  
80th percentile MAY flows

Sulphable habitat when

1) Mean 50th percentile salinity between 3 and 9 ppt and

2) Mean 10th percentile D.O.  $\approx 4.5$  maj[illegible]



**Striped Bass - Larvae**  
80th percentile MAY flows

Suitable habitat when

(1) Mean 50th percentile salinity between 3 and 9 ppt, and

(2) Mean 10th percentile D.O. = 4.5 mg/l

[illegible]



**Striped Bass - Spawning**  
20th percentile APRIL flows

Sustainable habitat when

95th percentile safety cut point and

(2) Mean velocity  $\approx 37$  cm/s[illegible]











# Striped Bass - Spawning 20th percentile APRIL flows

Schedule: Natural flows  
(1) 50m<sup>3</sup>/sec, (2) 100m<sup>3</sup>/sec, (3) 150m<sup>3</sup>/sec  
(4) Mean velocity = 30 cm/s

| Benthic Conditions |       | Plankton 44 ft Depth |       | Plankton 45 ft Depth |       | Plankton 46 ft Depth |       | Plankton 47 ft Depth |       | Plankton 48 ft Depth |       |
|--------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|
| 13                 | 14    | 15                   | 16    | 17                   | 18    | 19                   | 20    | 21                   | 22    | 23                   | 24    |
| 13.01              | 13.02 | 13.03                | 13.04 | 13.05                | 13.06 | 13.07                | 13.08 | 13.09                | 13.10 | 13.11                | 13.12 |
| 13.13              | 13.14 | 13.15                | 13.16 | 13.17                | 13.18 | 13.19                | 13.20 | 13.21                | 13.22 | 13.23                | 13.24 |
| 13.25              | 13.26 | 13.27                | 13.28 | 13.29                | 13.30 | 13.31                | 13.32 | 13.33                | 13.34 | 13.35                | 13.36 |
| 13.37              | 13.38 | 13.39                | 13.40 | 13.41                | 13.42 | 13.43                | 13.44 | 13.45                | 13.46 | 13.47                | 13.48 |
| 13.49              | 13.50 | 13.51                | 13.52 | 13.53                | 13.54 | 13.55                | 13.56 | 13.57                | 13.58 | 13.59                | 13.60 |
| 13.61              | 13.62 | 13.63                | 13.64 | 13.65                | 13.66 | 13.67                | 13.68 | 13.69                | 13.70 | 13.71                | 13.72 |
| 13.73              | 13.74 | 13.75                | 13.76 | 13.77                | 13.78 | 13.79                | 13.80 | 13.81                | 13.82 | 13.83                | 13.84 |
| 13.85              | 13.86 | 13.87                | 13.88 | 13.89                | 13.90 | 13.91                | 13.92 | 13.93                | 13.94 | 13.95                | 13.96 |
| 13.97              | 13.98 | 13.99                | 14.00 | 14.01                | 14.02 | 14.03                | 14.04 | 14.05                | 14.06 | 14.07                | 14.08 |
| 14.09              | 14.10 | 14.11                | 14.12 | 14.13                | 14.14 | 14.15                | 14.16 | 14.17                | 14.18 | 14.19                | 14.20 |
| 14.21              | 14.22 | 14.23                | 14.24 | 14.25                | 14.26 | 14.27                | 14.28 | 14.29                | 14.30 | 14.31                | 14.32 |
| 14.33              | 14.34 | 14.35                | 14.36 | 14.37                | 14.38 | 14.39                | 14.40 | 14.41                | 14.42 | 14.43                | 14.44 |
| 14.45              | 14.46 | 14.47                | 14.48 | 14.49                | 14.50 | 14.51                | 14.52 | 14.53                | 14.54 | 14.55                | 14.56 |
| 14.57              | 14.58 | 14.59                | 14.60 | 14.61                | 14.62 | 14.63                | 14.64 | 14.65                | 14.66 | 14.67                | 14.68 |
| 14.69              | 14.70 | 14.71                | 14.72 | 14.73                | 14.74 | 14.75                | 14.76 | 14.77                | 14.78 | 14.79                | 14.80 |
| 14.81              | 14.82 | 14.83                | 14.84 | 14.85                | 14.86 | 14.87                | 14.88 | 14.89                | 14.90 | 14.91                | 14.92 |
| 14.93              | 14.94 | 14.95                | 14.96 | 14.97                | 14.98 | 14.99                | 15.00 | 15.01                | 15.02 | 15.03                | 15.04 |
| 15.05              | 15.06 | 15.07                | 15.08 | 15.09                | 15.10 | 15.11                | 15.12 | 15.13                | 15.14 | 15.15                | 15.16 |
| 15.17              | 15.18 | 15.19                | 15.20 | 15.21                | 15.22 | 15.23                | 15.24 | 15.25                | 15.26 | 15.27                | 15.28 |
| 15.29              | 15.30 | 15.31                | 15.32 | 15.33                | 15.34 | 15.35                | 15.36 | 15.37                | 15.38 | 15.39                | 15.40 |
| 15.41              | 15.42 | 15.43                | 15.44 | 15.45                | 15.46 | 15.47                | 15.48 | 15.49                | 15.50 | 15.51                | 15.52 |
| 15.53              | 15.54 | 15.55                | 15.56 | 15.57                | 15.58 | 15.59                | 15.60 | 15.61                | 15.62 | 15.63                | 15.64 |
| 15.65              | 15.66 | 15.67                | 15.68 | 15.69                | 15.70 | 15.71                | 15.72 | 15.73                | 15.74 | 15.75                | 15.76 |
| 15.77              | 15.78 | 15.79                | 15.80 | 15.81                | 15.82 | 15.83                | 15.84 | 15.85                | 15.86 | 15.87                | 15.88 |
| 15.89              | 15.90 | 15.91                | 15.92 | 15.93                | 15.94 | 15.95                | 15.96 | 15.97                | 15.98 | 15.99                | 16.00 |







Striped Bass - Spawning  
50th percentile APRIL flows

Suitable habitat when

1) 50th percentile salinity &lt; 1 ppt, and

2) Mean velocity  $v = 30 \text{ cm/s}$

[illegible]



Striped Bass - Spawning  
50th percentile APRIL flows

Sustainable Habitat when

<sup>1)</sup> 90th percentile salinity  $\leq 1$  ppt. and2) Mean velocity  $\bar{u}$  (m/s)[illegible]













Striped Bass - Spawning  
50th Percentile APRIL 10th

Suitable habitat when  
(1) 50th percentile salinity > 1 ppt. and  
(2) mean velocity >= 50 cm/s

| Existing Conditions |      |      | Pluvial 44 ft Depth |       |       | Pluvial 45 ft Depth |       |       | Pluvial 46 ft Depth |       |       | Pluvial 47 ft Depth |       |       | Pluvial 48 ft Depth |       |       |
|---------------------|------|------|---------------------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|---------------------|-------|-------|
| 1-3                 | 4-6  | 7-9  | 10-12               | 13-15 | 16-18 | 19-21               | 22-24 | 25-27 | 28-30               | 31-33 | 34-36 | 37-39               | 40-42 | 43-45 | 46-48               | 49-51 | 52-54 |
| Pass                | Pass | Pass | Pass                | Pass  | Pass  | Pass                | Pass  | Pass  | Pass                | Pass  | Pass  | Pass                | Pass  | Pass  | Pass                | Pass  | Pass  |
| Fail                | Fail | Fail | Fail                | Fail  | Fail  | Fail                | Fail  | Fail  | Fail                | Fail  | Fail  | Fail                | Fail  | Fail  | Fail                | Fail  | Fail  |
| 50%                 | 50%  | 50%  | 50%                 | 50%   | 50%   | 50%                 | 50%   | 50%   | 50%                 | 50%   | 50%   | 50%                 | 50%   | 50%   | 50%                 | 50%   | 50%   |









Striped Bass - Spawning  
50th percentile APRIL flows

Suitable habitat when  
1) 90th percentile salinity  $\leq 1$  ppt, and  
2) Mean velocity  $> 30$  cm/s

| Empire Operations |          | Project 44 (Alpha) |         | Project 45 (Beta) |          | Project 46 (Gamma) |         | Project 47 (Delta) |       | Project 48 (Epsilon) |          | Project 49 (Zeta) |        | Project 50 (Eta) |         |
|-------------------|----------|--------------------|---------|-------------------|----------|--------------------|---------|--------------------|-------|----------------------|----------|-------------------|--------|------------------|---------|
| Site ID           | Category | Location           | Phase   | Status            | Location | Phase              | Status  | Location           | Phase | Status               | Location | Phase             | Status | Location         | Phase   |
| P001              | Alpha    | Site A             | Phase 1 | Complete          | P002     | Beta               | Phase 2 | In Progress        | P003  | Gamma                | Phase 3  | Complete          | P004   | Delta            | Phase 4 |
| P005              | Beta     | Site B             | Phase 1 | Complete          | P006     | Gamma              | Phase 2 | In Progress        | P007  | Delta                | Phase 3  | Complete          | P008   | Epsilon          | Phase 4 |
| P010              | Gamma    | Site C             | Phase 1 | Complete          | P011     | Delta              | Phase 2 | In Progress        | P012  | Epsilon              | Phase 3  | Complete          | P013   | Zeta             | Phase 4 |
| P015              | Delta    | Site D             | Phase 1 | Complete          | P016     | Epsilon            | Phase 2 | In Progress        | P017  | Zeta                 | Phase 3  | Complete          | P018   | Eta              | Phase 4 |
| P020              | Epsilon  | Site E             | Phase 1 | Complete          | P021     | Zeta               | Phase 2 | In Progress        | P022  | Eta                  | Phase 3  | Complete          | P023   | Theta            | Phase 4 |
| P025              | Zeta     | Site F             | Phase 1 | Complete          | P026     | Theta              | Phase 2 | In Progress        | P027  | Iota                 | Phase 3  | Complete          | P028   | Kappa            | Phase 4 |
| P030              | Theta    | Site G             | Phase 1 | Complete          | P031     | Iota               | Phase 2 | In Progress        | P032  | Kappa                | Phase 3  | Complete          | P033   | Lambda           | Phase 4 |
| P035              | Iota     | Site H             | Phase 1 | Complete          | P036     | Kappa              | Phase 2 | In Progress        | P037  | Lambda               | Phase 3  | Complete          | P038   | Mu               | Phase 4 |
| P040              | Kappa    | Site I             | Phase 1 | Complete          | P041     | Lambda             | Phase 2 | In Progress        | P042  | Mu                   | Phase 3  | Complete          | P043   | Nu               | Phase 4 |
| P045              | Lambda   | Site J             | Phase 1 | Complete          | P046     | Nu                 | Phase 2 | In Progress        | P047  | Xi                   | Phase 3  | Complete          | P048   | Omicron          | Phase 4 |
| P050              | Mu       | Site K             | Phase 1 | Complete          | P051     | Omicron            | Phase 2 | In Progress        | P052  | Pi                   | Phase 3  | Complete          | P053   | Rho              | Phase 4 |
| P055              | Nu       | Site L             | Phase 1 | Complete          | P056     | Pi                 | Phase 2 | In Progress        | P057  | Rho                  | Phase 3  | Complete          | P058   | Sigma            | Phase 4 |
| P060              | Omicron  | Site M             | Phase 1 | Complete          | P061     | Sigma              | Phase 2 | In Progress        | P062  | Tau                  | Phase 3  | Complete          | P063   | Upsilon          | Phase 4 |
| P065              | Pi       | Site N             | Phase 1 | Complete          | P066     | Tau                | Phase 2 | In Progress        | P067  | Phi                  | Phase 3  | Complete          | P068   | Chi              | Phase 4 |
| P070              | Rho      | Site O             | Phase 1 | Complete          | P071     | Phi                | Phase 2 | In Progress        | P072  | Chi                  | Phase 3  | Complete          | P073   | Psi              | Phase 4 |
| P075              | Sigma    | Site P             | Phase 1 | Complete          | P076     | Chi                | Phase 2 | In Progress        | P077  | Psi                  | Phase 3  | Complete          | P078   | Omega            | Phase 4 |
| P080              | Tau      | Site Q             | Phase 1 | Complete          | P081     | Psi                | Phase 2 | In Progress        | P082  | Omega                | Phase 3  | Complete          | P083   | Alpha            | Phase 4 |
| P085              | Phi      | Site R             | Phase 1 | Complete          | P086     | Omega              | Phase 2 | In Progress        | P087  | Alpha                | Phase 3  | Complete          | P088   | Beta             | Phase 4 |
| P090              | Chi      | Site S             | Phase 1 | Complete          | P091     | Alpha              | Phase 2 | In Progress        | P092  | Beta                 | Phase 3  | Complete          | P093   | Gamma            | Phase 4 |
| P095              | Psi      | Site T             | Phase 1 | Complete          | P096     | Beta               | Phase 2 | In Progress        | P097  | Gamma                | Phase 3  | Complete          | P098   | Delta            | Phase 4 |
| P100              | Omega    | Site U             | Phase 1 | Complete          | P101     | Gamma              | Phase 2 | In Progress        | P102  | Delta                | Phase 3  | Complete          | P103   | Epsilon          | Phase 4 |
| P105              | Alpha    | Site V             | Phase 1 | Complete          | P106     | Delta              | Phase 2 | In Progress        | P107  | Epsilon              | Phase 3  | Complete          | P108   | Zeta             | Phase 4 |
| P110              | Beta     | Site W             | Phase 1 | Complete          | P111     | Epsilon            | Phase 2 | In Progress        | P112  | Zeta                 | Phase 3  | Complete          | P113   | Eta              | Phase 4 |
| P115              | Gamma    | Site X             | Phase 1 | Complete          | P116     | Zeta               | Phase 2 | In Progress        | P117  | Eta                  | Phase 3  | Complete          | P118   | Theta            | Phase 4 |
| P120              | Delta    | Site Y             | Phase 1 | Complete          | P121     | Eta                | Phase 2 | In Progress        | P122  | Theta                | Phase 3  | Complete          | P123   | Kappa            | Phase 4 |
| P125              | Epsilon  | Site Z             | Phase 1 | Complete          | P126     | Theta              | Phase 2 | In Progress        | P127  | Kappa                | Phase 3  | Complete          | P128   | Lambda           | Phase 4 |
| P130              | Zeta     | Site AA            | Phase 1 | Complete          | P131     | Kappa              | Phase 2 | In Progress        | P132  | Lambda               | Phase 3  | Complete          | P133   | Mu               | Phase 4 |
| P135              | Theta    | Site AB            | Phase 1 | Complete          | P136     | Lambda             | Phase 2 | In Progress        | P137  | Mu                   | Phase 3  | Complete          | P138   | Nu               | Phase 4 |
| P140              | Iota     | Site AC            | Phase 1 | Complete          | P141     | Mu                 | Phase 2 | In Progress        | P142  | Nu                   | Phase 3  | Complete          | P143   | Omicron          | Phase 4 |
| P145              | Kappa    | Site AD            | Phase 1 | Complete          | P146     | Nu                 | Phase 2 | In Progress        | P147  | Omicron              | Phase 3  | Complete          | P148   | Pi               | Phase 4 |
| P150              | Lambda   | Site AE            | Phase 1 | Complete          | P151     | Omicron            | Phase 2 | In Progress        | P152  | Pi                   | Phase 3  | Complete          | P153   | Rho              | Phase 4 |
| P155              | Mu       | Site AF            | Phase 1 | Complete          | P156     | Pi                 | Phase 2 | In Progress        | P157  | Rho                  | Phase 3  | Complete          | P158   | Sigma            | Phase 4 |
| P160              | Nu       | Site AG            | Phase 1 | Complete          | P161     | Sigma              | Phase 2 | In Progress        | P162  | Tau                  | Phase 3  | Complete          | P163   | Upsilon          | Phase 4 |
| P165              | Pi       | Site AH            | Phase 1 | Complete          | P166     | Tau                | Phase 2 | In Progress        | P167  | Phi                  | Phase 3  | Complete          | P168   | Chi              | Phase 4 |
| P170              | Rho      | Site AI            | Phase 1 | Complete          | P171     | Phi                | Phase 2 | In Progress        | P172  | Chi                  | Phase 3  | Complete          | P173   | Psi              | Phase 4 |
| P175              | Sigma    | Site AJ            | Phase 1 | Complete          | P176     | Chi                | Phase 2 | In Progress        | P177  | Psi                  | Phase 3  | Complete          | P178   | Omega            | Phase 4 |
| P180              | Tau      | Site AK            | Phase 1 | Complete          | P181     | Psi                | Phase 2 | In Progress        | P182  | Omega                | Phase 3  | Complete          | P183   | Alpha            | Phase 4 |
| P185              | Phi      | Site AL            | Phase 1 | Complete          | P186     | Omega              | Phase 2 | In Progress        | P187  | Alpha                | Phase 3  | Complete          | P188   | Beta             | Phase 4 |
| P190              | Chi      | Site AM            | Phase 1 | Complete          | P191     | Alpha              | Phase 2 | In Progress        | P192  | Beta                 | Phase 3  | Complete          | P193   | Gamma            | Phase 4 |
| P195              | Psi      | Site AN            | Phase 1 | Complete          | P196     | Beta               | Phase 2 | In Progress        | P197  | Gamma                | Phase 3  | Complete          | P198   | Delta            | Phase 4 |
| P200              | Omega    | Site AO            | Phase 1 | Complete          | P201     | Gamma              | Phase 2 | In Progress        | P202  | Delta                | Phase 3  | Complete          | P203   | Epsilon          | Phase 4 |
| P205              | Alpha    | Site AP            | Phase 1 | Complete          | P206     | Delta              | Phase 2 | In Progress        | P207  | Epsilon              | Phase 3  | Complete          | P208   | Zeta             | Phase 4 |
| P210              | Beta     | Site AQ            | Phase 1 | Complete          | P211     | Epsilon            | Phase 2 | In Progress        | P212  | Zeta                 | Phase 3  | Complete          | P213   | Eta              | Phase 4 |
| P215              | Gamma    | Site AR            | Phase 1 | Complete          | P216     | Zeta               | Phase 2 | In Progress        | P217  | Eta                  | Phase 3  | Complete          | P218   | Theta            | Phase 4 |
| P220              | Delta    | Site AS            | Phase 1 | Complete          | P221     | Eta                | Phase 2 | In Progress        | P222  | Theta                | Phase 3  | Complete          | P223   | Kappa            | Phase 4 |
| P225              | Epsilon  | Site AT            | Phase 1 | Complete          | P226     | Theta              | Phase 2 | In Progress        | P227  | Kappa                | Phase 3  | Complete          | P228   | Lambda           | Phase 4 |
| P230              | Zeta     | Site AU            | Phase 1 | Complete          | P231     | Kappa              | Phase 2 | In Progress        | P232  | Lambda               | Phase 3  | Complete          | P233   | Mu               | Phase 4 |
| P235              | Theta    | Site AV            | Phase 1 | Complete          | P236     | Lambda             | Phase 2 | In Progress        | P237  | Mu                   | Phase 3  | Complete          | P238   | Nu               | Phase 4 |
| P240              | Iota     | Site AW            | Phase 1 | Complete          | P241     | Mu                 | Phase 2 | In Progress        | P242  | Nu                   | Phase 3  | Complete          | P243   | Omicron          | Phase 4 |
| P245              | Kappa    | Site AX            | Phase 1 | Complete          | P246     | Nu                 | Phase 2 | In Progress        | P247  | Omicron              | Phase 3  | Complete          | P248   | Pi               | Phase 4 |
| P250              | Lambda   | Site AY            | Phase 1 | Complete          | P251     | Omicron            | Phase 2 | In Progress        | P252  | Pi                   | Phase 3  | Complete          | P253   | Rho              | Phase 4 |
| P255              | Mu       | Site AZ            | Phase 1 | Complete          | P256     | Pi                 | Phase 2 | In Progress        | P257  | Rho                  | Phase 3  | Complete          | P258   | Sigma            | Phase 4 |
| P260              | Nu       | Site BA            | Phase 1 | Complete          | P261     | Sigma              | Phase 2 | In Progress        | P262  | Tau                  | Phase 3  | Complete          | P263   | Upsilon          | Phase 4 |
| P265              | Pi       | Site BB            | Phase 1 | Complete          | P266     | Tau                | Phase 2 | In Progress        | P267  | Phi                  | Phase 3  | Complete          | P268   | Chi              | Phase 4 |
| P270              | Rho      | Site BC            | Phase 1 | Complete          | P271     | Phi                | Phase 2 | In Progress        | P272  | Chi                  | Phase 3  | Complete          | P273   | Psi              | Phase 4 |
| P275              | Sigma    | Site BD            | Phase 1 | Complete          | P276     | Chi                | Phase 2 | In Progress        | P277  | Psi                  | Phase 3  | Complete          | P278   | Omega            | Phase 4 |
| P280              | Tau      | Site BE            | Phase 1 | Complete          | P281     | Psi                | Phase 2 | In Progress        | P282  | Omega                | Phase 3  | Complete          | P283   | Alpha            | Phase 4 |
| P285              | Phi      | Site BF            | Phase 1 | Complete          | P286     | Omega              | Phase 2 | In Progress        | P287  | Alpha                | Phase 3  | Complete          | P288   | Beta             | Phase 4 |
| P290              | Chi      | Site BG            | Phase 1 | Complete          | P291     | Alpha              | Phase 2 | In Progress        | P292  | Beta                 | Phase 3  | Complete          | P293   | Gamma            | Phase 4 |
| P295              | Psi      | Site BH            | Phase 1 | Complete          | P296     | Beta               | Phase 2 | In Progress        | P297  | Gamma                | Phase 3  | Complete          | P298   | Delta            | Phase 4 |
| P300              | Omega    | Site BI            | Phase 1 | Complete          | P301     | Gamma              | Phase 2 | In Progress        | P302  | Delta                | Phase 3  | Complete          | P303   | Epsilon          | Phase 4 |
| P305              | Alpha    | Site BJ            | Phase 1 | Complete          | P306     | Delta              | Phase 2 | In Progress        | P307  | Epsilon              | Phase 3  | Complete          | P308   | Zeta             | Phase 4 |
| P310              | Beta     | Site BK            | Phase 1 | Complete          | P311     | Epsilon            | Phase 2 | In Progress        | P312  | Zeta                 | Phase 3  | Complete          | P313   | Eta              | Phase 4 |
| P315              | Gamma    | Site BL            | Phase 1 | Complete          | P316     | Zeta               | Phase 2 | In Progress        | P317  | Eta                  | Phase 3  | Complete          | P318   | Theta            | Phase 4 |
| P320              | Delta    | Site BM            | Phase 1 | Complete          | P321     | Eta                | Phase 2 | In Progress        | P322  | Theta                | Phase 3  | Complete          | P323   | Kappa            | Phase 4 |
| P325              | Epsilon  | Site BN            | Phase 1 | Complete          | P326     | Theta              | Phase 2 | In Progress        | P327  | Kappa                | Phase 3  | Complete          | P328   | Lambda           | Phase 4 |
| P330              | Zeta     | Site BO            | Phase 1 | Complete          | P331     | Kappa              | Phase 2 | In Progress        | P332  | Lambda               | Phase 3  | Complete          | P333   | Mu               | Phase 4 |
| P335              | Theta    | Site BP            | Phase 1 | Complete          | P336     | Lambda             | Phase 2 | In Progress        | P337  | Mu                   | Phase 3  | Complete          | P338   | Nu               | Phase 4 |
| P340              | Iota     | Site BQ            | Phase 1 | Complete          | P341     | Mu                 | Phase 2 | In Progress        | P342  | Nu                   | Phase 3  | Complete          | P343   | Omicron          | Phase 4 |
| P345              | Kappa    | Site BR            | Phase 1 | Complete          | P346     | Nu                 | Phase 2 | In Progress        | P347  | Omicron              | Phase 3  | Complete          | P348   | Pi               | Phase 4 |
| P350              | Lambda   | Site BS            | Phase 1 | Complete          | P351     | Omicron            | Phase 2 | In Progress        | P352  | Pi                   | Phase 3  | Complete          | P353   | Rho              | Phase 4 |
| P355              | Mu       | Site BT            | Phase 1 | Complete          | P356     | Pi                 | Phase 2 | In Progress        | P357  | Rho                  | Phase 3  | Complete          | P358   | Sigma            | Phase 4 |
| P360              | Nu       | Site BU            | Phase 1 | Complete          | P361     | Sigma              | Phase 2 | In Progress        | P362  | Tau                  | Phase 3  | Complete          | P363   | Upsilon          | Phase 4 |
| P365              | Pi       | Site BV            | Phase 1 | Complete          | P366     | Tau                | Phase 2 | In Progress        | P367  | Phi                  | Phase 3  | Complete          | P368   | Chi              | Phase 4 |
| P370              | Rho      | Site BW            | Phase 1 | Complete          | P371     | Phi                | Phase 2 | In Progress        | P372  | Chi                  | Phase 3  | Complete          | P373   | Psi              | Phase 4 |
| P375              | Sigma    | Site BX            | Phase 1 | Complete          | P376     | Chi                | Phase 2 | In Progress        | P377  | Psi                  | Phase 3  | Complete          | P378   | Omega            | Phase 4 |
| P380              | Tau      | Site BY            | Phase 1 | Complete          | P381     | Psi                | Phase 2 | In Progress        | P382  | Omega                | Phase 3  | Complete          | P383   | Alpha            | Phase 4 |
| P385              | Phi      | Site BZ            | Phase 1 | Complete          | P386     | Omega              | Phase 2 | In Progress        | P387  | Alpha                | Phase 3  | Complete          | P388   | Beta             | Phase 4 |
| P390              | Chi      | Site CA            | Phase 1 | Complete          | P391     | Alpha              | Phase 2 | In Progress        | P392  | Beta                 | Phase 3  | Complete          | P393   | Gamma            | Phase 4 |
| P395              | Psi      | Site CB            | Phase 1 | Complete          | P396     | Beta               | Phase 2 | In Progress        | P397  | Gamma                | Phase 3  | Complete          | P398   | Delta            | Phase 4 |
| P400              | Omega    | Site CC            | Phase 1 | Complete          | P401     | Gamma              | Phase 2 | In Progress        | P402  | Delta                | Phase 3  | Complete          | P403   | Epsilon          | Phase 4 |
| P405              | Alpha    | Site CD            | Phase 1 | Complete          | P406     | Delta              | Phase 2 | In Progress        | P407  | Epsilon              | Phase 3  | Complete          | P408   | Zeta             | Phase 4 |
| P410              | Beta     | Site CE            | Phase 1 | Complete          | P411     | Epsilon            | Phase 2 | In Progress        | P412  | Zeta                 | Phase 3  | Complete          | P413   | Eta              | Phase 4 |
| P415              | Gamma    | Site CF            | Phase 1 | Complete          | P416     | Zeta               | Phase 2 | In Progress        | P417  | Eta                  | Phase 3  | Complete          | P418   | Theta            | Phase 4 |
| P420              | Delta    | Site CG            | Phase 1 | Complete          | P421     | Eta                | Phase 2 | In Progress        | P422  | Theta                | Phase 3  | Complete          | P423   | Kappa            | Phase 4 |
| P425              | Epsilon  | Site CH            | Phase 1 | Complete          | P426     | Theta              | Phase 2 | In Progress        | P427  | Kappa                | Phase 3  | Complete          | P428   | Lambda           | Phase 4 |
| P430              | Zeta     | Site CI            | Phase 1 | Complete          | P431     | Kappa              | Phase 2 | In Progress        | P432  | Lambda               | Phase 3  | Complete          | P433   | Mu               | Phase 4 |
| P435              | Theta    | Site CJ            | Phase 1 | Complete          | P436     | Lambda             | Phase 2 | In Progress        | P437  | Mu                   | Phase 3  | Complete          | P438   | Nu               | Phase 4 |
| P440              | Iota     | Site CK            | Phase 1 | Complete          | P441     | Mu                 | Phase 2 | In Progress        | P442  | Nu                   | Phase 3  | Complete          | P443   | Omicron          | Phase 4 |
| P445              | Kappa    | Site CL            | Phase 1 | Complete          | P446     | Nu                 | Phase 2 | In Progress        | P447  | Omicron              | Phase 3  | Complete          | P448   | Pi               | Phase 4 |
| P450              | Lambda   | Site CM            | Phase 1 | Complete          | P451     | Omicron            | Phase 2 | In Progress        | P452  | Pi                   | Phase 3  | Complete          | P453   | Rho              | Phase 4 |
| P455              | Mu       | Site CN            | Phase 1 | Complete          | P456     | Pi                 | Phase 2 | In Progress        | P457  | Rho                  | Phase 3  | Complete          | P458   | Sigma            | Phase 4 |
| P460              | Nu       | Site CO            | Phase 1 | Complete          | P461     | Sigma              | Phase 2 | In Progress        | P462  | Tau                  | Phase 3  | Complete          | P463   | Upsilon          | Phase 4 |
| P465              | Pi       | Site CP            | Phase 1 | Complete          | P466     | Tau                | Phase 2 | In Progress        | P467  | Phi                  | Phase 3  | Complete          | P468   | Chi              | Phase 4 |
| P470              | Rho      | Site CQ            | Phase 1 | Complete          | P471     | Phi                | Phase 2 | In Progress        | P472  | Chi                  | Phase 3  | Complete          | P473   | Psi              | Phase 4 |
| P475              | Sigma    | Site CR            | Phase 1 | Complete          | P476     | Chi                | Phase 2 | In Progress        | P477  | Psi                  | Phase 3  | Complete          | P478   | Omega            | Phase 4 |
| P480              | Tau      | Site CS            | Phase 1 | Complete          | P481     | Psi                | Phase 2 | In Progress        | P482  | Omega                | Phase 3  | Complete          | P483   | Alpha            | Phase 4 |
| P485              | Phi      | Site CT            | Phase 1 | Complete          | P486     | Omega              | Phase 2 | In Progress        | P487  | Alpha                | Phase 3  | Complete          | P488   | Beta             | Phase 4 |
| P490              | Chi      | Site CU            | Phase 1 | Complete          | P491     | Alpha              | Phase 2 | In Progress        | P492  | Beta                 | Phase 3  | Complete          | P493   | Gamma            | Phase 4 |
| P495              | Psi      | Site CV            | Phase 1 | Complete          | P496     | Beta               | Phase 2 | In Progress        | P497  | Gamma                | Phase 3  | Complete          | P498   | Delta            | Phase 4 |
| P500              | Omega    | Site CW            | Phase 1 | Complete          | P501     | Gamma              | Phase 2 | In Progress        | P502  | Delta                | Phase 3  | Complete          | P503   | Epsilon          | Phase 4 |
| P505              | Alpha    | Site CX            | Phase 1 | Complete          | P506     | Delta              | Phase 2 | In Progress        | P507  | Epsilon              | Phase 3  | Complete          | P508   | Zeta             | Phase 4 |
| P510              | Beta     | Site CY            | Phase 1 | Complete          | P511     | Epsilon            | Phase 2 | In Progress        | P512  | Zeta                 | Phase 3  | Complete          | P513   | Eta              | Phase 4 |
| P515              | Gamma    | Site CZ            | Phase 1 | Complete          | P516     | Zeta               | Phase 2 | In Progress        | P517  | Eta                  | Phase 3  | Complete          | P5     |                  |         |



**Striped Bass - Spawning**  
80th percentile APRIL flows

Suitable habitat when

Suitable habitat when

(1) 50th percentile salinity  $\leq 1$  ppt, and  
(2) Mean velocity  $\geq 30$  cm/s

(2) Mean velocity  $\geq 30$  cm/s[illegible]



# Striped Bass - Spawning

60M profile APRIL flows

Suitable habitat when

(1) 50th percentile salinity <= 1 ppt. and

(2) Mean velocity >= 30 cm/s

| Existing Conditions |  |  |  |  |  |  |  |  |  | Florida 44 ft Depth |  |  |  |  |  |  |  |  |  | Florida 45 ft Depth |  |  |  |  |  |  |  |  |  | Florida 46 ft Depth |  |  |  |  |  |  |  |  |  | Florida 47 ft Depth |  |  |  |  |  |  |  |  |  | Florida 48 ft Depth |  |  |  |  |  |  |  |  |  | Florida 49 ft Depth |  |  |  |  |  |  |  |  |  | Florida 50 ft Depth |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  |  |  |  |  |  |  |  |         |  |  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|  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  |  | CHANGES |  |  |  |  |  |  |  |  | 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Shortnose Sturgeon - Juvenile  
50th percentile JANUARY flows

Cultivable habitat when 00

 $\mu = 3.5$  mol/l at 90% exceedance (10th 99ile). $\mu = 3.0$  at 95% (5th percentile) and $\mu = 2.0$  at 99% (1 percentile)

Suitable habitat when Max Salinity <= 4 ppt

[illegible]





**Shortnose Sturgeon - Juvenile**  
50th percentile JANUARY flows

Sustainable habitat when CO

 $\alpha = 3.5$  mol at 90% excedance (10th %ile). $\geq 3.0$  at 95% (5th percentile), and $p=2.0$  at 99% (1 percentile)Suitable habitat when Max Salinity  $\leq 4$  ppt.

| L | U | Existing Conditions | Plant6b |  | Plant6c |  | Plant6d |  | Plant6e |  | Plant6f |  | Plant6g |  | Plant6h |  | Plant6i |  | Plant6j |  | Plant6k |  | Plant6l |  | Plant6m |  | Plant6n |  | Plant6o |  | Plant6p |  | Plant6q |  | Plant6r |  | Plant6s |  | Plant6t |  | Plant6u |  | Plant6v |  | Plant6w |  | Plant6x |  | Plant6y |  | Plant6z |  | Plant6aa |  | Plant6ab |  | Plant6ac |  | Plant6ad |  | Plant6ae |  | Plant6af |  | Plant6ag |  | Plant6ah |  | Plant6ai |  | Plant6aj |  | Plant6ak |  | Plant6al |  | Plant6am |  | Plant6an |  | Plant6ao |  | Plant6ap |  | Plant6aq |  | Plant6ar |  | Plant6as |  | Plant6at |  | Plant6au |  | Plant6av |  | Plant6aw |  | Plant6ax |  | Plant6ay |  | Plant6az |  | Plant6ba |  | Plant6bb |  | Plant6bc |  | Plant6bd |  | Plant6be |  | Plant6bf |  | Plant6bg |  | Plant6bh |  | Plant6bi |  | Plant6bj |  | Plant6bk |  | Plant6bl |  | Plant6bm |  | Plant6bn |  | Plant6bo |  | Plant6bp |  | Plant6bq |  | Plant6br |  | Plant6bs |  | Plant6bt |  | Plant6bu |  | Plant6bv |  | Plant6bw |  | Plant6bx |  | Plant6by |  | Plant6bz |  | Plant6ca |  | Plant6cb |  | Plant6cc |  | Plant6cd |  | Plant6ce |  | Plant6cf |  | Plant6cg |  | Plant6ch |  | Plant6ci |  | Plant6cj |  | Plant6ck |  | Plant6cl |  | Plant6cm |  | Plant6cn |  | Plant6co |  | Plant6cp |  | Plant6cq |  | Plant6cr |  | Plant6cs |  | Plant6ct |  | Plant6cu |  | Plant6cv |  | Plant6cw |  | Plant6cx |  | Plant6cy |  | Plant6cz |  | Plant6da |  | Plant6db |  | Plant6dc |  | Plant6dd |  | Plant6de |  | Plant6df |  | Plant6dg |  | Plant6dh |  | Plant6di |  | Plant6dj |  | Plant6dk |  | Plant6dl |  | Plant6dm |  | Plant6dn |  | Plant6do |  | Plant6dp |  | Plant6dq |  | Plant6dr |  | Plant6ds |  | Plant6dt |  | Plant6du |  | Plant6dv |  | Plant6dw |  | Plant6dx |  | Plant6dy |  | Plant6dz |  | Plant6ea |  | Plant6eb |  | Plant6ec |  | Plant6ed |  | Plant6ee |  | Plant6ef |  | Plant6eg |  | Plant6eh |  | Plant6ei |  | Plant6ej |  | Plant6ek |  | Plant6el |  | Plant6em |  | Plant6en |  | Plant6eo |  | Plant6ep |  | Plant6eq |  | Plant6er |  | Plant6es |  | Plant6et |  | Plant6eu |  | Plant6ev |  | Plant6ew |  | Plant6ex |  | Plant6ey |  | Plant6ez |  | Plant6fa |  | Plant6fb |  | Plant6fc |  | Plant6fd |  | Plant6fe |  | Plant6ff |  | Plant6fg |  | Plant6fh |  | Plant6fi |  | Plant6fj |  | Plant6fk |  | Plant6fl |  | Plant6fm |  | Plant6fn |  | Plant6fo |  | Plant6fp |  | Plant6fq |  | Plant6fr |  | Plant6fs |  | Plant6ft |  | Plant6fu |  | Plant6fv |  | Plant6fw |  | Plant6fx |  | Plant6fy |  | Plant6fz |  | Plant6ga |  | Plant6gb |  | Plant6gc |  | Plant6gd |  | Plant6ge |  | Plant6gf |  | Plant6gg |  | Plant6gh |  | Plant6gi |  | Plant6gj |  | Plant6gk |  | Plant6gl |  | Plant6gm |  | Plant6gn |  | Plant6go |  | Plant6gp |  | Plant6gq |  | Plant6gr |  | Plant6gs |  | Plant6gt |  | Plant6gu |  | Plant6gv |  | Plant6gw |  | Plant6gx |  | Plant6gy |  | Plant6gz |  | Plant6ha |  | Plant6hb |  | Plant6hc |  | Plant6hd |  | Plant6he |  | Plant6hf |  | Plant6hg |  | Plant6hi |  | Plant6hj |  | Plant6hk |  | Plant6hl |  | Plant6hm |  | Plant6hn |  | Plant6ho |  | Plant6hp |  | Plant6hq |  | Plant6hr |  | Plant6hs |  | Plant6ht |  | Plant6hu |  | Plant6hv |  | Plant6hw |  | Plant6hx |  | Plant6hy |  | Plant6hz |  | Plant6ia |  | Plant6ib |  | Plant6ic |  | Plant6id |  | Plant6ie |  | Plant6if |  | Plant6ig |  | Plant6ih |  | Plant6ii |  | Plant6ij |  | Plant6ik |  | Plant6il |  | Plant6im |  | Plant6in |  | Plant6io |  | Plant6ip |  | Plant6iq |  | Plant6ir |  | Plant6is |  | Plant6it |  | Plant6iu |  | Plant6iv |  | Plant6iw |  | Plant6ix |  | Plant6iy |  | Plant6iz |  | Plant6ja |  | Plant6jb |  | Plant6jc |  | Plant6jd |  | Plant6je |  | Plant6jf |  | Plant6jg |  | Plant6jh |  | Plant6ji |  | Plant6jj |  | Plant6jk |  | Plant6jl |  | Plant6jm |  | Plant6jn |  | Plant6jo |  | Plant6jp |  | Plant6jq |  | Plant6jr |  | Plant6js |  | Plant6jt |  | Plant6ju |  | Plant6jv |  | Plant6jw |  | Plant6jx |  | Plant6jy |  | Plant6jz |  | Plant6ka |  | Plant6kb |  | Plant6kc |  | Plant6kd |  | Plant6ke |  | Plant6kf |  | Plant6kg |  | Plant6kh |  | Plant6ki |  | Plant6kj |  | Plant6kk |  | Plant6kl |  | Plant6km |  | Plant6kn |  | Plant6ko |  | Plant6kp |  | Plant6kq |  | Plant6kr |  | Plant6ks |  | Plant6kt |  | Plant6ku |  | Plant6kv |  | Plant6kw |  | Plant6kx |  | Plant6ky |  | Plant6kz |  | Plant6la |  | Plant6lb |  | Plant6lc |  | Plant6ld |  | Plant6le |  | Plant6lf |  | Plant6lg |  | Plant6lh |  | Plant6li |  | Plant6lj |  | Plant6lk |  | Plant6ll |  | Plant6lm |  | Plant6ln |  | Plant6lo |  | Plant6lp |  | Plant6lq |  | Plant6lr |  | Plant6ls |  | Plant6lt |  | Plant6lu |  | Plant6lv |  | Plant6lw |  | Plant6lx |  | Plant6ly |  | Plant6lz |  | Plant6ma |  | Plant6mb |  | Plant6mc |  | Plant6md |  | Plant6me |  | Plant6mf |  | Plant6mg |  | Plant6mh |  | Plant6mi |  | Plant6mj |  | Plant6mk |  | Plant6ml |  | Plant6mm |  | Plant6mn |  | Plant6mo |  | Plant6mp |  | Plant6mq |  | Plant6mr |  | Plant6ms |  | Plant6mt |  | Plant6mu |  | Plant6mv |  | Plant6mw |  | Plant6mx |  | Plant6my |  | Plant6mz |  | Plant6na |  | Plant6nb |  | Plant6nc |  | Plant6nd |  | Plant6ne |  | Plant6nf |  | Plant6ng |  | Plant6nh |  | Plant6ni |  | Plant6nj |  | Plant6nk |  | Plant6nl |  | Plant6nm |  | Plant6nn |  | Plant6no |  | Plant6np |  | Plant6nq |  | Plant6nr |  | Plant6ns |  | Plant6nt |  | Plant6nu |  | Plant6nv |  | Plant6nw |  | Plant6nx |  | Plant6ny |  | Plant6nz |  | Plant6oa |  | Plant6ob |  | Plant6oc |  | Plant6od |  | Plant6oe |  | Plant6of |  | Plant6og |  | Plant6oh |  | Plant6oi |  | Plant6oj |  | Plant6ok |  | Plant6ol |  | Plant6om |  | Plant6on |  | Plant6oo |  | Plant6op |  | Plant6oq |  | Plant6or |  | Plant6os |  | Plant6ot |  | Plant6ou |  | Plant6ov |  | Plant6ow |  | Plant6ox |  | Plant6oy |  | Plant6oz |  | Plant6pa |  | Plant6pb |  | Plant6pc |  | Plant6pd |  | Plant6pe |  | Plant6pf |  | Plant6pg |  | Plant6ph |  | Plant6pi |  | Plant6pj |  | Plant6pk |  | Plant6pl |  | Plant6pm |  | Plant6pn |  | Plant6po |  | Plant6pp |  | Plant6pq |  | Plant6pr |  | Plant6ps |  | Plant6pt |  | Plant6pu |  | Plant6pv |  | Plant6pw |  | Plant6px |  | Plant6py |  | Plant6pz |  | Plant6qa |  | Plant6qb |  | Plant6qc |  | Plant6qd |  | Plant6qe |  | Plant6qf |  | Plant6qg |  | Plant6qh |  | Plant6qi |  | Plant6qj |  | Plant6qk |  | Plant6ql |  | Plant6qm |  | Plant6qn |  | Plant6qo |  | Plant6qp |  | Plant6qq |  | Plant6qr |  | Plant6qs |  | Plant6qt |  | Plant6qu |  | Plant6qv |  | Plant6qw |  | Plant6qx |  | Plant6qy |  | Plant6qz |  | Plant6ra |  | Plant6rb |  | Plant6rc |  | Plant6rd |  | Plant6re |  | Plant6rf |  | Plant6rg |  | Plant6rh |  | Plant6ri |  | Plant6rj |  | Plant6rk |  | Plant6rl |  | Plant6rm |  | Plant6rn |  | Plant6ro |  | Plant6rp |  | Plant6rq |  | Plant6rr |  | Plant6rs |  | Plant6rt |  | Plant6ru |  | Plant6rv |  | Plant6rw |  | Plant6rx |  | Plant6ry |  | Plant6rz |  | Plant6sa |  | Plant6sb |  | Plant6sc |  | Plant6sd |  | Plant6se |  | Plant6sf |  | Plant6sg |  | Plant6sh |  | Plant6si |  | Plant6sj |  | Plant6sk |  | Plant6sl |  | Plant6sm |  | Plant6sn |  | Plant6so |  | Plant6sp |  | Plant6sq |  | Plant6sr |  | Plant6ss |  | Plant6st |  | Plant6su |  | Plant6sv |  | Plant6sw |  | Plant6sx |  | Plant6sy |  | Plant6sz |  | Plant6ta |  | Plant6tb |  | Plant6tc |  | Plant6td |  | Plant6te |  | Plant6tf |  | Plant6tg |  | Plant6th |  | Plant6ti |  | Plant6tj |  | Plant6tk |  | Plant6tl |  | Plant6tm |  | Plant6tn |  | Plant6to |  | Plant6tp |  | Plant6tq |  | Plant6tr |  | Plant6ts |  | Plant6tt |  | Plant6tu |  | Plant6tv |  | Plant6tw |  | Plant6tx |  | Plant6ty |  | Plant6tz |  | Plant6ua |  | Plant6ub |  | Plant6uc |  | Plant6ud |  | Plant6ue |  | Plant6uf |  | Plant6ug |  | Plant6uh |  | Plant6ui |  | Plant6uj |  | Plant6uk |  | Plant6ul |  | Plant6um |  | Plant6un |  | Plant6uo |  | Plant6up |  | Plant6uq |  | Plant6ur |  | Plant6us |  | Plant6ut |  | Plant6uu |  | Plant6uv |  | Plant6uw |  | Plant6ux |  | Plant6uy |  | Plant6uz |  | Plant6va |  | Plant6vb |  | Plant6vc |  | Plant6vd |  | Plant6ve |  | Plant6vf |  | Plant6vg |  | Plant6vh |  | Plant6vi |  | Plant6vj |  | Plant6vk |  | Plant6vl |  | Plant6vm |  | Plant6vn |  | Plant6vo |  | Plant6vp |  | Plant6vq |  | Plant6vr |  | Plant6vs |  | Plant6vt |  | Plant6vu |  | Plant6vv |  | Plant6vw |  | Plant6vx |  | Plant6vy |  | Plant6vz |  | Plant6wa |  | Plant6wb |  | Plant6wc |  | Plant6wd |  | Plant6we |  | Plant6wf |  | Plant6wg |  | Plant6wh |  | Plant6wi |  | Plant6wj |  | Plant6wk |  | Plant6wl |  | Plant6wm |  | Plant6wn |  | Plant6wo |  | Plant6wp |  | Plant6wq |  | Plant6wr |  | Plant6ws |  | Plant6wt |  | Plant6wu |  | Plant6wv |  | Plant6ww |  | Plant6wx |  | Plant6wy |  | Plant6wz |  | Plant6xa |  | Plant6xb |  | Plant6xc |  | Plant6xd |  | Plant6xe |  | Plant6xf |  | Plant6xg |  | Plant6xh |  | Plant6xi |  | Plant6xj |  | Plant6xk |  | Plant6xl |  | Plant6xm |  | Plant6xn |  | Plant6xo |  | Plant6xp |  | Plant6xq |  | Plant6xr |  | Plant6xs |  | Plant6xt |  | Plant6xu |  | Plant6xv |  | Plant6xw |  | Plant6xx |  | Plant6xy |  | Plant6xz |  | Plant6ya |  | Plant6yb |  | Plant6yc |  | Plant6yd |  | Plant6ye |  | Plant6yf |  | Plant6yg |  | Plant6yh |  | Plant6yi |  | Plant6yj |  | Plant6yk |  | Plant6yl |  | Plant6ym |  | Plant6yn |  | Plant6yo |  | Plant6yp |  | Plant6yq |  | Plant6yr |  | Plant6ys |  | Plant6yt |  | Plant6yu |  | Plant6yv |  | Plant6yw |  | Plant6yx |  | Plant6yy |  | Plant6yz |  | Plant6za |  | Plant6zb |  | Plant6zc |  | Plant6zd |  | Plant6ze |  | Plant6zf |  | Plant6zg |  | Plant6zh |  | Plant6zi |  | Plant6zj |  | Plant6zk |  | Plant6zl |  | Plant6zm |  | Plant6zn |  | Plant6zo |  | Plant6zp |  | Plant6zq |  | Plant6zr |  | Plant6zs |  | Plant6zt |  | Plant6zu |  | Plant6zv |  | Plant6zw |  | Plant6zx |  | Plant6zy |  | Plant6zz |  | Plant6aa |  | Plant6ab |  | Plant6ac |  | Plant6ad |  | Plant6ae |  | Plant6af |  | Plant6ag |  | Plant6ah |  | Plant6ai |  | Plant6aj |  | Plant6ak |  | Plant6al |  | Plant6am |  | Plant6an |  | Plant6ao |  | Plant6ap |  | Plant6aq |  | Plant6ar |  | Plant6as |  | Plant6at |  | Plant6au |  | Plant6av |  | Plant6aw |  | Plant6ax |  | Plant6ay |  | Plant6az |  | Plant6ba |  | Plant6bb |  | Plant6bc |  | Plant6bd |  | Plant6be |  | Plant6bf |  | Plant6bg |  | Plant6bh |  | Plant6bi |  | Plant6bj |  | Plant6bk |  | Plant6bl |  | Plant6bm |  | Plant6bn |  | Plant6bo |  | Plant6bp |  | Plant6bq |  | Plant6br |  | Plant6bs |  | Plant6bt |  | Plant6bu |  | Plant6bv |  | Plant6bw |  | Plant6bx |  | Plant6by |  | Plant6bz |  | Plant6ca |  | Plant6cb |  | Plant6cc |  | Plant6cd |  | Plant6ce |  | Plant6cf |  | Plant6cg |  | Plant6ch |  | Plant6ci |  | Plant6cj |  | Plant6ck |  | Plant6cl |  | Plant6cm |  | Plant6cn |  | Plant6co |  | Plant6cp |  | Plant6cq |  | Plant6cr |  | Plant6cs |  | Plant6ct |  | Plant6cu |  | Plant6cv |  | Plant6cw |  | Plant6cx |  | Plant6cy |  | Plant6cz |  | Plant6da |  | Plant6db |  | Plant6dc |  | Plant6dd |  | Plant6de |  | Plant6df |  | Plant6dg |  | Plant6dh |  | Plant6di |  | Plant6dj |  | Plant6dk |  | Plant6dl |  | Plant6dm |  | Plant6dn |  | Plant6do |  | Plant6dp |  | Plant6dq |  | Plant6dr |  | Plant6ds |  | Plant6dt |  | Plant6du |  | Plant6dv |  | Plant6dw |  | Plant6dx |  | Plant6dy |  | Plant6dz |  | Plant6ea |  | Plant6eb |  | Plant6ec |  | Plant6ed |  | Plant6ee |  | Plant6ef |  | Plant6eg |  | Plant6eh |  | Plant6ei |  | Plant6ej |  | Plant6ek |  | Plant6el |  | Plant6em |  | Plant6en |  | Plant6eo |  | Plant6ep |  | Plant6eq |  | Plant6er |  | Plant6es |  | Plant6et |  | Plant6eu |  | Plant6ev |  | Plant6ew |  | Plant6ex |  | Plant6ey |  | Plant6ez |  | Plant6fa |  | Plant6fb |  | Plant6fc |  | Plant6fd |  | Plant6fe |  | Plant6ff |  | Plant6fg |  | Plant6fh |  | Plant6fi |  | Plant6fj |  | Plant6fk |  | Plant6fl |  | Plant6fm |  | Plant6fn |  | Plant6fo |  | Plant6fp |  | Plant6fq |  | Plant6fr |  | Plant6fs |  | Plant6ft |  | Plant6fu |  | Plant6fv |  | Plant6fw |  | Plant6fx |  | Plant6fy |  | Plant6fz |  | Plant6ga |  | Plant6gb |  | Plant6gc |  | Plant6gd |  | Plant6ge |  | Plant6gf |  | Plant6gg |  | Plant6gh |  | Plant6gi |  | Plant6gj |  | Plant6gk |  | Plant6gl |  | Plant6gm |  | Plant6gn |  | Plant6go |  | Plant6gp |  | Plant6gq |  | Plant6gr |  | Plant6gs |  | Plant6gt |  | Plant6gu |  | Plant6gv |  | Plant6gw |  | Plant6gx |  | Plant6gy |  | Plant6gz |  | Plant6ha |  | Plant6hb |  | Plant6hc |  | Plant6hd |  | Plant6he |  | Plant6hf |  | Plant6hg |  | Plant6hi |  | Plant6hj |  | Plant6hk |  | Plant6hl |  | Plant6hm |  | Plant6hn |  | Plant6ho |  | Plant6hp |  | Plant6hq |  | Plant6hr |  | Plant6hs |  | Plant6ht |  | Plant6hu |  | Plant6hv |  | Plant6hw |  | Plant6hx |  | Plant6hy |  | Plant6hz |  | Plant6ia |  | Plant6ib |  | Plant6ic |  | Plant6id |  | Plant6ie |  | Plant6if |  | Plant6ig |  | Plant6ih |  | Plant6ii |  | Plant6ij |  | Plant6ik |  | Plant6il |  | Plant6im |  | Plant6in |  | Plant6io |  | Plant6ip |  | Plant6iq |  | Plant6ir |  | Plant6is |  | Plant6it |  | Plant6iu |  | Plant6iv |  | Plant6iw |  | Plant6ix |  | Plant6iy |  | Plant6iz |  | Plant6ja |  | Plant6jb |  | Plant6jc |  | Plant6jd |  | Plant6je |  | Plant6jf |  | Plant6jg |  | Plant6jh |  | Plant6ji |  | Plant6jj |  | Plant6jk |  | Plant6jl |  | Plant6jm |  | Plant6jn |  | Plant6jo |  | Plant6jp |  | Plant6jq |  | Plant6jr |  | Plant6js |  | Plant6jt |  | Plant6ju |  | Plant6jv |  | Plant6jw |  | Plant6jx |  | Plant6jy |  | Plant6jz |  | Plant6ka |  | Plant6kb |  | Plant6kc |  | Plant6kd |  | Plant6ke |  | Plant6kf |  | Plant6kg |  | Plant6kh |  | Plant6ki |  | Plant6kj |  | Plant6kk |  | Plant6kl |  | Plant6km |  | Plant6kn |  | Plant6ko |  | Plant6kp |  | Plant6kq |  | Plant6kr |  | Plant6ks |  | Plant6kt |  | Plant6ku |  | Plant6kv |  | Plant6kw |  | Plant6kx |  | Plant6ky |  | Plant6kz |  | Plant6la |  | Plant6lb |  | Plant6lc |  | Plant6ld |  | Plant6le |  | Plant6lf |  | Plant6lg |  | Plant6lh |  | Plant6li |  | Plant6lj |  | Plant6lk |  | Plant6ll |  | Plant6lm |  | Plant6ln |  | Plant6lo |  | Plant6lp |  | Plant6lq |  | Plant6lr |  | Plant6ls |  | Plant6lt |  | Plant6lu |  | Plant6lv |  | Plant6lw |  | Plant6lx |  | Plant6ly |  | Plant6lz |  | Plant6ma |  | Plant6mb |  | Plant6mc |  | Plant6md |  | Plant6me |  | Plant6mf |  | Plant6mg |  | Plant6mh |  | Plant6mi |  | Plant6mj |  | Plant6mk |  | Plant6ml |  | Plant6mm |  | Plant6mn |  | Plant6mo |  | Plant6mp |  | Plant6mq |  | Plant6mr |  | Plant6ms |  | Plant6mt |  | Plant6mu |  | Plant6mv |  | Plant6mw |  | Plant6mx |  | Plant6my |  | Plant6mz |  | Plant6na |  | Plant6nb |  | Plant6nc |  | Plant6nd |  | Plant6ne |  | Plant6nf |  | Plant6ng |  | Plant6nh |  | Plant6ni |  | Plant6nj |  | Plant6nk |  | Plant6nl |  | Plant6nm |  | Plant6nn |  | Plant6no |  | Plant6np |  | Plant6nq |  | Plant6nr |  | Plant6ns |  | Plant6nt |  | Plant6nu |  | Plant6nv |  | Plant6nw |  | Plant6nx |  | Plant6ny |  | Plant6nz |  | Plant6oa |  | Plant6ob |  | Plant6oc |  | Plant6od |  | Plant6oe |  | Plant6of |  | Plant6og |  | Plant6oh |  | Plant6oi |  | Plant6oj |  | Plant6ok |  | Plant6ol |  | Plant6om |  | Plant6on |  | Plant6oo |  | Plant6op |  | Plant6oq |  | Plant6or |  | Plant6os |  | Plant6ot |  | Plant6ou |  | Plant6ov |  | Plant6ow |  | Plant6ox |  | Plant6oy |  | Plant6oz |  | Plant6pa |  | Plant6pb |  | Plant6pc |  | Plant6pd |  | Plant6pe |  | Plant6pf |  | Plant6pg |  | Plant6ph |  | Plant6pi |  | Plant6pj |  | Plant6pk |  | Plant6pl |  | Plant6pm |  | Plant6pn |  | Plant6po |  | Plant6pp |  | Plant6pq |  | Plant6pr |  | Plant6ps |  | Plant6pt |  | Plant6pu |  | Plant6pv |  | Plant6pw |  | Plant6px |  | Plant6py |  | Plant6pz |  | Plant6qa |  | Plant6qb |  |
|---|---|---------------------|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------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|---|---|---------------------|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|---------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------|--|----------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**Shortnose Sturgeon - Juvenile**  
50th percentile JANUARY flows

Suitable habitat when DO

>= 3.5 mg/l at 90% exceedance (10

 $\geq 3.0$  at 95% (5th percentile) and $\geq 2.0$  at 99% (1 percentile)

Suitable habitat when Max Salinity &lt;= 4 ppt

[illegible]

**Shorthead Sturgeon - Juvenile**  
50th percentile JANUARY flows

Suitable habitat when DO

 $\leq 3.5$  mm at 90% exceedance (10th S<sub>all</sub>(4)). $\geq 3.0$  at 95% (5th percentile), and $p = 2.0$  at 99% (1 percentile)

Suitable habitat when Max Salinity <= 4 ppt

[illegible]

**Shorthead Sturgeon - Juvenile**  
50th percentile JANUARY flows

Suitable habitat when DO

 $\leq 3.5$  mg/l at 90% exceedance (10th %ile). $\sigma = 3.0$  at 95% (5th percentile), and $\sigma = 2.0$  at 99% (1 percentile)

Suitable habitat when Max Salinity <= 4 ppt

[illegible]

# Shortnose Sturgeon - Juvenile 50th percentile JANUARY flows

Suitable habitat when DO

>= 3.5 mg/l at 90% exceedance (10th %ile).

>=3.0 at 95% (5th percentile), and

>=2.0 at 99% (1 percentile)

Suitable habitat when Max Salinity <= 4 ppt

| Existing Conditions |       |         | Plan64 44 ft Depth |      |      | Plan64 45 ft Depth |      |      | Plan64 46 ft Depth |      |      | Plan64 47 ft Depth |      |      | Plan64 48 ft Depth |      |      |
|---------------------|-------|---------|--------------------|------|------|--------------------|------|------|--------------------|------|------|--------------------|------|------|--------------------|------|------|
| LJ                  | SalEx | Dowl Ex | salEx              | DO   | DO   | salEx              | DO   | DO   | salEx              | DO   | DO   | salEx              | DO   | DO   | salEx              | DO   | DO   |
| 10                  | 11    | 12      | 13                 | 14   | 15   | 16                 | 17   | 18   | 19                 | 20   | 21   | 22                 | 23   | 24   | 25                 | 26   | 27   |
| 26 119              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 15 119              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 13 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 14 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 15 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 16 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 26 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 39 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 39 120              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 13 121              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 14 121              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 15 121              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 16 121              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 26 121              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 39 121              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 13 122              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 14 122              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 15 122              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 16 122              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 26 122              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 39 122              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 13 123              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 14 123              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 15 123              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 16 123              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 26 123              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 39 123              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 13 124              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 14 124              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 15 124              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 16 124              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 26 124              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |
| 39 124              | Pass  | Pass    | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass | Pass               | Pass | Pass |



# Shorthose Sturgeon - Juvenile 50th percentile JANUARY flows

Suitable habitat when DO

>= 1.5 mg/l at 90% exceedance (10th %ile).

>=3.0 at 95% (5th percentile), and

>=2.0 at 99% (1 percentile)

Suitable habitat when Max Salinity <= 4 ppt

| Existing Conditions |       |          | Planting 44 ft Depth |            |               |           | Planting 45 ft Depth |               |           |            | Planting 46 ft Depth |           |            |               | Planting 47 ft Depth |            |               |           | Planting 48 ft Depth |               |  |  |
|---------------------|-------|----------|----------------------|------------|---------------|-----------|----------------------|---------------|-----------|------------|----------------------|-----------|------------|---------------|----------------------|------------|---------------|-----------|----------------------|---------------|--|--|
| Station             | Depth | Existing | sat/catch            | Reef/Catch | Changelocatch | sat/catch | Reef/Catch           | Changelocatch | sat/catch | Reef/Catch | Changelocatch        | sat/catch | Reef/Catch | Changelocatch | sat/catch            | Reef/Catch | Changelocatch | sat/catch | Reef/Catch           | Changelocatch |  |  |
| 124                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 125                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 126                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 127                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 128                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 129                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 130                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 131                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 132                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 133                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 134                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 135                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 136                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 137                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 138                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 139                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 140                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 141                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 142                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 143                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 144                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 145                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 146                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 147                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |
| 148                 | Pass  | Pass     | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          | Pass      | Pass       | Pass                 | Pass      | Pass       | Pass          | Pass                 | Pass       | Pass          | Pass      | Pass                 | Pass          |  |  |

**Shortnose Sturgeon - Juvenile**  
**50th percentile JANUARY flows**

Suitable habitat when DO

>= 3.5 mg/l at 90% exceedance (10th %ile).

>=3.0 at 95% (5th percentile), and

>=2.0 at 99% (1 percentile)

Suitable habitat when Max Salinity <= 4 ppt

| Existing Conditions |             | Planb. 44 ft Depth |             | Planb. 45 ft Depth |             | Planb. 46 ft Depth |             | Planb. 47 ft Depth |             | Planb. 48 ft Depth |             |
|---------------------|-------------|--------------------|-------------|--------------------|-------------|--------------------|-------------|--------------------|-------------|--------------------|-------------|
| I/J                 | satExl/Down | satExl/Down        | satExl/Down | satExl/Down        | satExl/Down | satExl/Down        | satExl/Down | satExl/Down        | satExl/Down | satExl/Down        | satExl/Down |
| Pass                | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 148             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 149             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 150             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 151             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 152             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 153             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 154             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 155             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 156             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 157             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 158             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 159             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 160             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 161             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 162             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 163             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 164             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 165             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |
| 1.4 166             | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        | Pass               | Pass        |



























# **Shortnose Sturgeon - Adults** **August average flows**

Suitable habitat when DO  
 >= 4.0 mg/l at 90% exceedance (10th %ile),  
 >= 3.0 at 95% (5th percentile), and  
 >= 2.0 at 99% (1 percentile)  
 Suitable habitat when Max Salinity <= 10 ppt

| I J   | Existing Conditions |      | Plan6B: 14 ft Depth |      | Plan6A: 45 ft Depth |      | Plan6A: 46 ft Depth |      | Plan6A: 47 ft Depth |      | Plan6A: 48 ft Depth |      |
|-------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
|       | Sal                 | DO   | Ex                  | St   | Sal                 | DO   | Ex                  | St   | Sal                 | DO   | Ex                  | St   |
| 14 47 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 15 47 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 16 47 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 48 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 15 48 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 16 48 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 49 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 15 49 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 16 49 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 50 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 15 50 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 16 50 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 17 50 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 51 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 52 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 53 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 54 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 55 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 56 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 57 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 58 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 59 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 20 59 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 31 59 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 32 59 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 60 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 30 60 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 31 60 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 32 60 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 61 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 30 61 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 31 61 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 32 61 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 62 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 30 62 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 31 62 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 32 62 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 63 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 31 63 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 14 64 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |
| 30 64 | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass | Fail                | Pass |

# Shortnose Sturgeon - Adults

## August average flows

Suitable habitat when DO

>= 4.0 mg/l at 50% exceedance (10th %ile),

>= 3.0 at 95% (5th percentile), and

>= 2.0 at 99% (1 percentile)

Suitable habitat when Max Salinity <= 10 ppt

| Existing Conditions |      | PlanBc, 44 ft Depth |         | PlanBc, 45 ft Depth |         | PlanBc, 46 ft Depth |         | PlanBc, 47 ft Depth |         | PlanBc, 48 ft Depth |         |
|---------------------|------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|
| I                   | J    | sat/best            | DO/best | sat/best            | DO/best | sat/best            | DO/best | sat/best            | DO/best | sat/best            | DO/best |
| 31.64               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.64               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.65               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.65               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.65               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.65               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 33.65               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.66               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.66               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.66               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.66               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 26.66               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.67               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.67               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.67               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.67               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 26.67               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.68               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.68               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.68               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.68               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 26.68               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.69               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.69               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.69               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.69               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 26.69               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.70               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.70               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.70               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.70               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 33.70               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.71               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.71               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.71               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.71               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.72               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 20.72               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 31.72               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 32.72               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |
| 14.73               | Fail | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    | Fail                | Pass    |











**Shortnose Sturgeon - Adults**  
*August average flows*

Suitable habitat when DO

$\geq 4.0$  mg/l at 90% exceedance (10th %ile).

 $\rho = 3.0$  at 95% (5th percentile) and $\alpha = 2.0$  at 99% (1 percentile)

Suitable habitat when Max Salinity <= 10 ppt

[illegible]



# Shortnose Sturgeon - Adults

## August average flows

Suitable habitat when DO

>= 4.0 mg/l at 90% exceedance (10th %ile),

>= 3.0 at 95% (5th percentile), and

>= 2.0 at 99% (1 percentile)

Suitable habitat when Max. Salinity <= 10 ppt

| I J    | Existing Conditions |       | PlanBia, 44 ft Depth |         | PlanBia, 45 ft Depth |         | PlanBia, 46 ft Depth |       | PlanBia, 47 ft Depth |         | PlanBia, 48 ft Depth |       |
|--------|---------------------|-------|----------------------|---------|----------------------|---------|----------------------|-------|----------------------|---------|----------------------|-------|
|        | salineX             | DOexl | Existing             | PlanBia | DOexl                | PlanBia | salineX              | DOexl | Existing             | PlanBia | salineX              | DOexl |
| 15 114 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 26 114 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 114 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 115 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 115 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 115 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 26 115 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 115 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 116 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 116 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 116 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 26 116 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 116 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 117 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 117 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 117 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 26 117 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 117 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 118 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 118 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 118 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 20 118 | Pass                | Fail  | Fail                 | Fail    | Pass                 | Fail    | Pass                 | Fail  | Fail                 | Fail    | Fail                 | Fail  |
| 26 118 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 118 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 119 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 119 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 119 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 20 119 | Pass                | Fail  | Fail                 | Fail    | Pass                 | Fail    | Pass                 | Fail  | Fail                 | Fail    | Fail                 | Fail  |
| 26 119 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 119 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 120 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 120 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 120 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 16 120 | Pass                | Fail  | Fail                 | Fail    | Pass                 | Fail    | Pass                 | Fail  | Fail                 | Fail    | Fail                 | Fail  |
| 20 120 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 120 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 121 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 14 121 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 15 121 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 20 121 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 39 121 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |
| 13 122 | Pass                | Pass  | Pass                 | Pass    | Pass                 | Pass    | Pass                 | Pass  | Pass                 | Pass    | Pass                 | Pass  |

**Shorthead Sturgeon - Adults**  
*August average flows*

Suitable habitat when DO

 $\geq 4.0$  mg/l at 90% exceedance (10th %ile), $\geq 3.0$  at 95% (5th percentile), and $\alpha = 20$  at 99% (1 percentile)

Suitable habitat when Max Salinity <= 10 ppt

[illegible]

# Shortnose Sturgeon - Adults

## August average flows

Suitable habitat when DO

>= 4.0 mg/l at 50% exceedance (10th %ile),

>= 3.0 at 95% (5th percentile), and

>= 2.0 at 99% (1 percentile)

Suitable habitat when Max. Salinity <= 10 ppt

| I J    | Existing Conditions |         | Plan6b, 44 ft Depth |         | Plan6a, 45 ft Depth |         | Plan6b, 46 ft Depth |         | Plan6a, 47 ft Depth |         | Plan6b, 48 ft Depth |         |
|--------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|---------------------|---------|
|        | saline              | DOexist | saline              | DOexist | saline              | DOexist | saline              | DOexist | saline              | DOexist | saline              | DOexist |
| 23 127 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 13 128 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 128 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 128 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 13 129 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 129 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 129 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 6 130  | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 9 120  | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 10 130 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 11 130 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 12 130 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 13 130 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 130 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 130 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 131 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 131 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 132 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 132 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 133 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 133 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 134 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 23 134 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 135 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 136 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 137 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 138 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 139 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 140 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 141 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 142 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 143 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 144 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 145 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 146 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 147 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 148 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 149 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 150 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 151 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |
| 14 152 | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    | Pass                | Pass    |

# Shortnose Sturgeon - Adults August average flows

Suitable habitat when DO  
 >= 4.0 mg/l at 90% exceedance (10th %ile),  
 >= 3.0 at 95% (5th percentile), and  
 >= 2.0 at 99% (1 percentile)  
 Suitable habitat when Max Salinity <= 10 ppt

| I, J   | Existing Conditions |      | PlanBB, 44 ft Depth |      | PlanBA, 45 ft Depth |      | PlanBA, 46 ft Depth |      | PlanBA, 47 ft Depth |      | PlanBA, 48 ft Depth |      |
|--------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
|        | salEX               | DOex | salBB               | DOBB | salBA               | DOBA | salBA               | DOBA | salBA               | DOBA | salBA               | DOBA |
| 14.153 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.154 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.155 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.156 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.157 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.158 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.159 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.160 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.161 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.162 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.163 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.164 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.165 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |
| 14.166 | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass | Pass                | Pass |





**Southern Flounder**  
*August average flows*

Suitable habitat when

DO &gt;= 4.0 mg/l at 95% exceedance (10th percentile)

Significance = 59%

[illegible]



# **Southern Flounder** **August average flows**

Suitable habitat when

DO  $\geq$  4.0 mg/L at 90% exceedance (10th percentile)

Slope  $\leq 45\%$

| Existing Conditions |      | Planbio, 44 ft Depth |      | Planbio, 45 ft Depth |      | Planbio, 46 ft Depth |      | Planbio, 47 ft Depth |      | Planbio, 48 ft Depth |      |
|---------------------|------|----------------------|------|----------------------|------|----------------------|------|----------------------|------|----------------------|------|
| I                   | J    | DO                   | DO   | DO                   | DO   | DO                   | DO   | DO                   | DO   | DO                   | DO   |
| 14.74               | Fail | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass |
| 15.74               | Fail | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass |
| 30.74               | Fail | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass |
| 31.74               | Fail | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass | Pass                 | Pass |
| 13.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.76               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 13.77               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.77               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.77               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.77               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.77               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 13.78               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.78               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.78               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.78               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.78               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 13.79               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.79               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.79               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.79               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.79               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 12.80               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 13.80               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.80               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.80               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.80               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.80               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 13.81               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.81               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 15.81               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 30.81               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 31.81               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 13.82               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |
| 14.82               | Pass | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail | Fail                 | Fail |



## Southern Flounder

## August average flows

Suitable habitat when

DO  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)

Slope <= 5%

[illegible]



## Southern Flounder

## August average flows

Suitable habitat when

DO &gt;= 4.0 mg/l at 90% exceedance (10th percentile)

Slope  $\leq 5\%$ [illegible]



### Southern Flounder

## August average flows

Suitable habitat when

DO  $\geq$  4.0 mg/l at 90% exceedance (10th percentile)Slope  $\leq 5\%$ [illegible]



**Southern Flounder**  
*August average flows*

Suitable habitat when

 $\text{CO} >= 4.0 \text{ mol/l at } 90\% \text{ exceedance (10th percentile)}$ 

Slope &lt;= 5%

[illegible]

## Southern Flounder

## August average flows

Suitable habitat when

DO  $\geq 4.0$  mg/l at 90% exceedance (10th percentile)Slope  $\leq 5\%$ [illegible]



# **Savannah Harbor Expansion Project**

Evaluation of Hurricane Surge Impacts with  
Proposed Mitigation Plan

*December 2007*

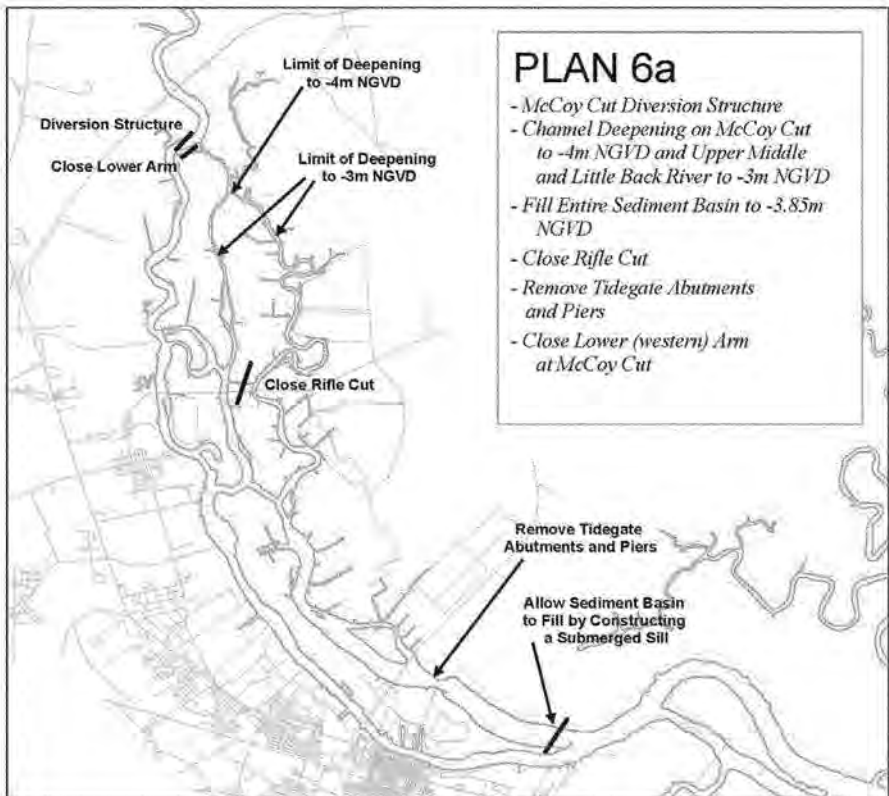


## Introduction

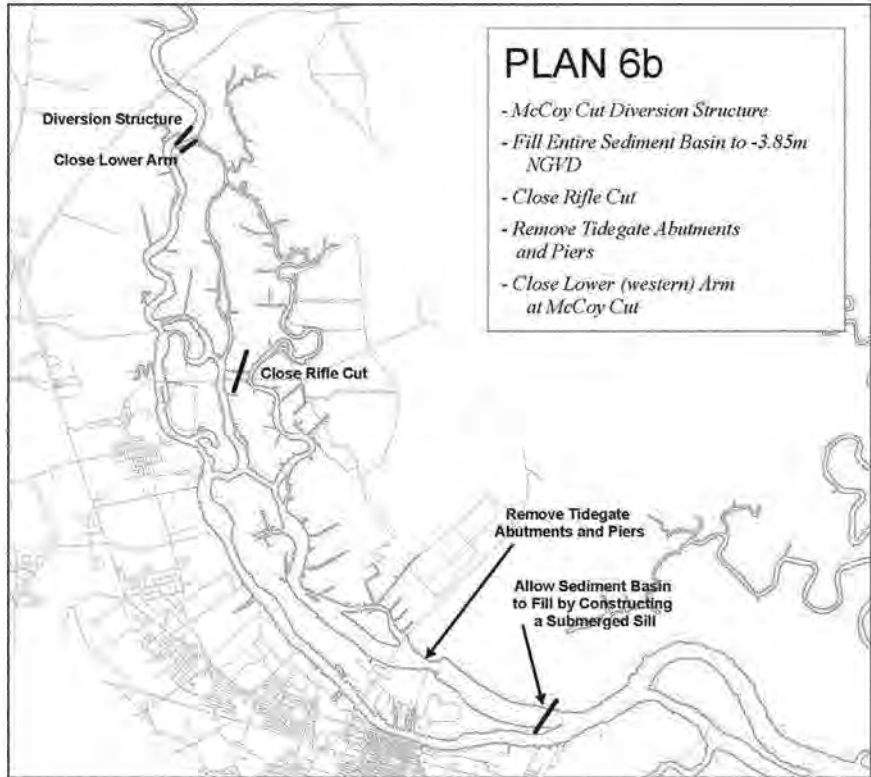
This report summarizes the results of hurricane surge impacts with implementation of the proposed mitigation plan to alter flows in the estuary at each alternative navigation channel depth (44 ft, 45 ft, 46 ft, and 48 ft). The two proposed plans are: Plan 6b for the 44 ft depth, and Plan 6a for the 45 ft, 46 ft, and 48 ft depths. Details of each of the mitigation plans are shown in Figures 1 and 2. For details on how these plans were developed and selected, please see the main report document for this project.

The purpose of the hurricane surge modeling is to determine the impacts of deepening the navigation channel and implementation of the proposed mitigation plan and its effect on the propagation of a hurricane storm surge traveling upstream through the estuary and river system.

**Figure 1:** Plan 6a (proposed mitigation for 45 ft, 46 ft and 48 ft channel depths)



**Figure 2:** Plan 6b (proposed mitigation for 44 ft channel depth)



## Hydrodynamic Model Input

The plans were evaluated using the 3D hydrodynamic model EFDC, which predicts, among other variables, water surface elevations. For the hurricane surge analysis, the water surface elevations are compared at different points in the harbor to determine impacts.

To incorporate a hurricane storm surge in the 3D hydrodynamic model the tidal boundary was modified. The hurricane surge data set was developed by Applied Technology and Management, Inc. (ATM). The data set is based on measured water surface elevations collected at the USGS Customs House gage located in Charleston, SC during Hurricane Hugo which made landfall on September 21, 1989. ATM separated the hurricane storm surge component from the harmonic tidal component. The max increase in water surface elevation for the hurricane storm surge component collected at this gauging station is 7.69 ft. However, the storm surge as Hurricane

Hugo made landfall varied with some places receiving a near 20 ft storm surge. Due to the difficulty in directly applying the storm surge gage data in Charleston to Savannah the data set was ratioed by ATM to create three synthetic storm surges with peaks of 5 ft, 10 ft and 15 ft. For the initial impact analysis all three of the synthetic storm surges were modeled, see *Hurricane Surge Modeling* dated September 23, 2005. However, for the purposes of analyzing the impacts with the proposed mitigation plans only the 15 ft storm surge was modeled.

The modeling time period is late August 1997, which was chosen for several reasons. (1) 1997 closely represents historic average flow conditions at Clyo (the upstream flow boundary, (2) August is close to peak hurricane season when the likelihood of a large storm hitting the Savannah coastline would be more probable, and (3) spring tidal conditions occur on August 19, 1997.

## Output Presented

Before presenting the output and discussing the results, the limitations of the EFDC hydrodynamic model grid developed for the Savannah Harbor Expansion Project. The model grid developed for the expansion study was not developed with emphasis on hurricane surge modeling. The shipping channel, Back River system and other smaller side channels are described in detail in the grid, with emphasis on salinity and dissolved oxygen levels in the estuary. The beaches and uplands are not accounted for in the model. The marshes are accounted for, but on a volumetric approach with emphasis on calibration. These areas would likely be impacted during a hurricane and would have a significant role on the propagation of a storm surge throughout the estuary. The model is useful for relative comparative purposes and NOT to describe where flooding would occur during a hurricane.

This report includes analysis of hurricane surge impacts in the estuary. All output was evaluated in the hydrodynamic model (EFDC) at two cells 14\_48, which is representative of the water quality conditions near Fort Jackson and 14\_126, which is at the I-95 bridge. The analysis includes a table showing peak surge values and two figures that show the water surface elevations over the length of the storm surge. All values presented are water surface elevations in meters-NGVD.

## Results

The results of the analysis show that there is little impact expected on hurricane surge at Fort Jackson or further upstream at the I-95 bridge. See Table 1. The figures following the report make for a quick interpretation of the results and show the obvious slight impact to the hurricane surge.

**Table 1:** Peak Surge Elevations

|                      | <b>Ft. Jackson</b> | <b>Rise in Elev.<br/>(Ft. Jackson)</b> | <b>I-95</b> | <b>Rise in Elev.<br/>(I-95)</b> |
|----------------------|--------------------|----------------------------------------|-------------|---------------------------------|
| Existing Depth       | 6.48               | -                                      | 6.66        | -                               |
| 44 ft Depth, Plan 6b | 6.54               | 0.06                                   | 6.82        | 0.16                            |
| 45 ft Depth, Plan 6a | 6.54               | 0.06                                   | 6.85        | 0.19                            |
| 46 ft Depth, Plan 6a | 6.55               | 0.07                                   | 6.87        | 0.21                            |
| 48 ft Depth, Plan 6a | 6.58               | 0.10                                   | 6.90        | 0.24                            |

*All elevations are m-NGVD. All rises in elevation are m.*

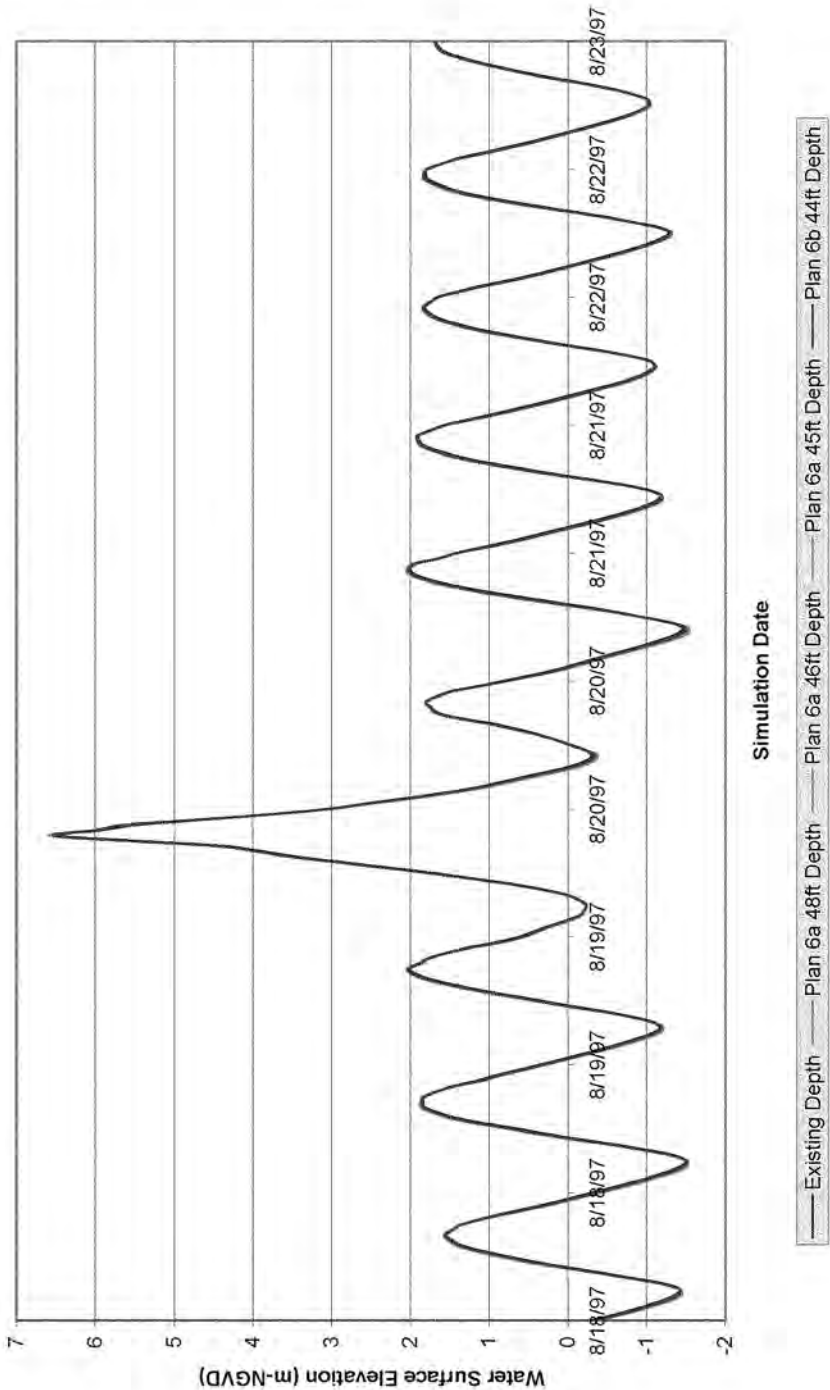
The output results in Table 1 show that the maximum increase in the water surface elevations occur for the 48 ft channel depth (deepening 6ft). At the I-95 bridge this increase is 0.24 m. While this is an increase due to deepening, it is certainly not considered significantly large as compared to the overall storm surge height of 15 ft.

The impacts analysis (*Hurricane Surge Modeling* dated September 23, 2005) showed that the 48 ft channel depth with the surge peak occurring during the spring tidal peak had the greatest impact on the surge height. All other scenarios that were modeled with varying tidal conditions during the surge peak did not have increases as great as the peak-on-peak condition that was also modeled in this analysis. Therefore, it is concluded that the 15 ft storm surge during the spring tide is the worst case and the maximum increases that are predicted are 0.24m.

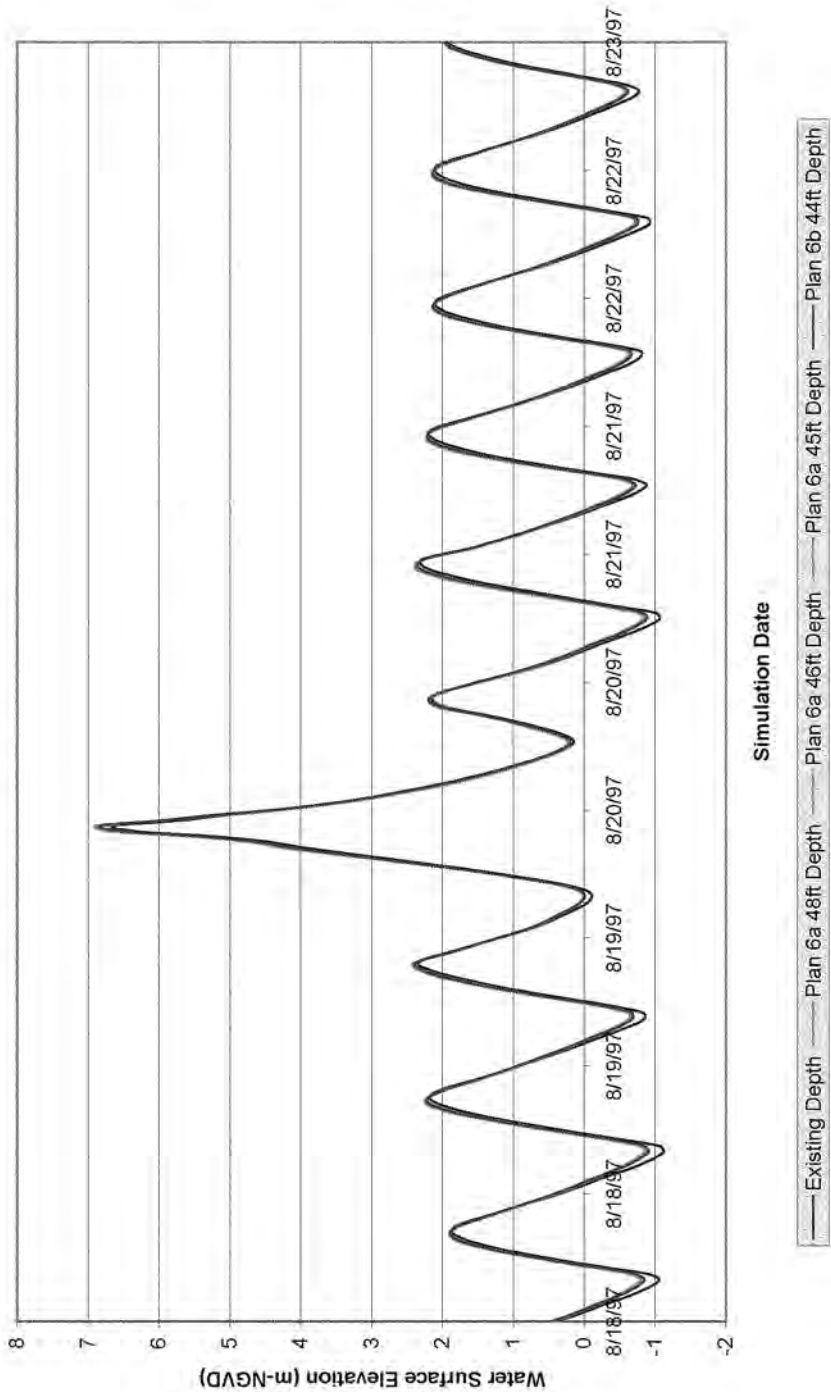
## Conclusion

In summary, Mitigation Plans 6a and 6b are the proposed flow altering mitigation plans to reduce impacts in the estuary. The model results show that a hurricane surge does increase, despite mitigation efforts, but the increases are certainly not significant.

15 ft Storm Surge Comparison at Fort Jackson  
(surge timed during peak of spring high tide)



15 ft Storm Surge Comparison at I-95  
(surge timed during peak of spring high tide)





# **Savannah Harbor Expansion Project**

Evaluation of Marsh/Wetland Impacts with  
Proposed Mitigation Plan

*November 2007*

## Introduction

This report summarizes the results of marsh impacts with implementation of the proposed mitigation plan to alter flows in the estuary at each alternative channel depth (44 ft, 45 ft, 46 ft, and 48 ft). The two proposed plans are: Plan 6b for the 44 ft depth, and Plan 6a for the 45 ft, 46 ft, and 48 ft depths. Details of each of the mitigation plans are shown in Figures 1 and 2. For details on how these plans were developed and selected, please see the main report document for this project. It should be noted that these plans are not considered the Selected Mitigation Plan, but will be a component of the Selected Plan.

**Figure 1:** Plan 6a (proposed mitigation for 45 ft, 46 ft and 48 ft channel depths)

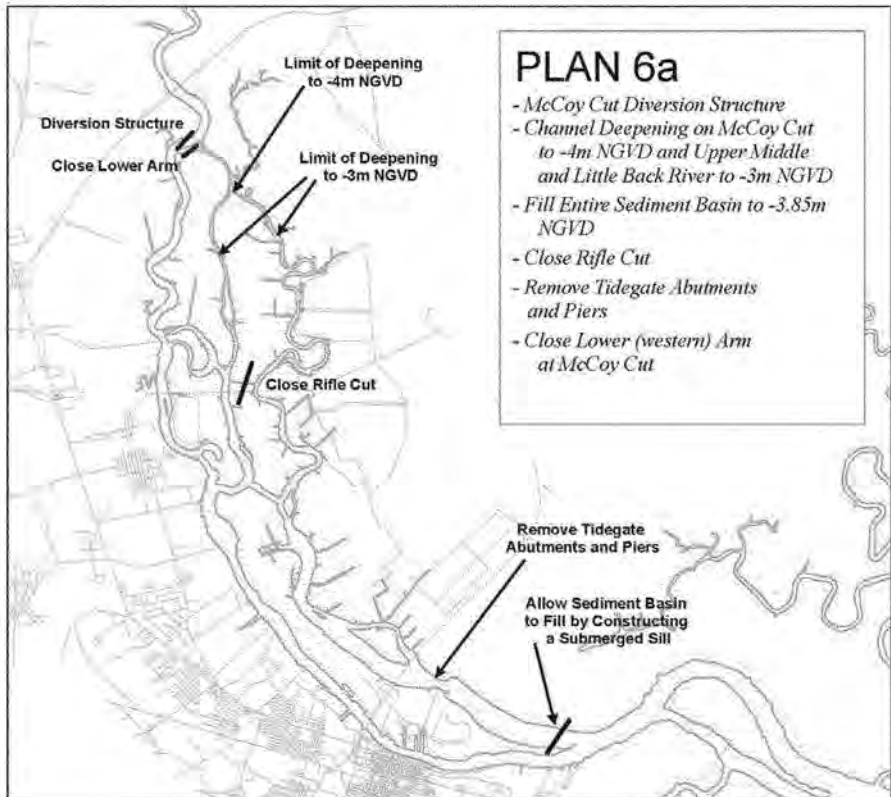
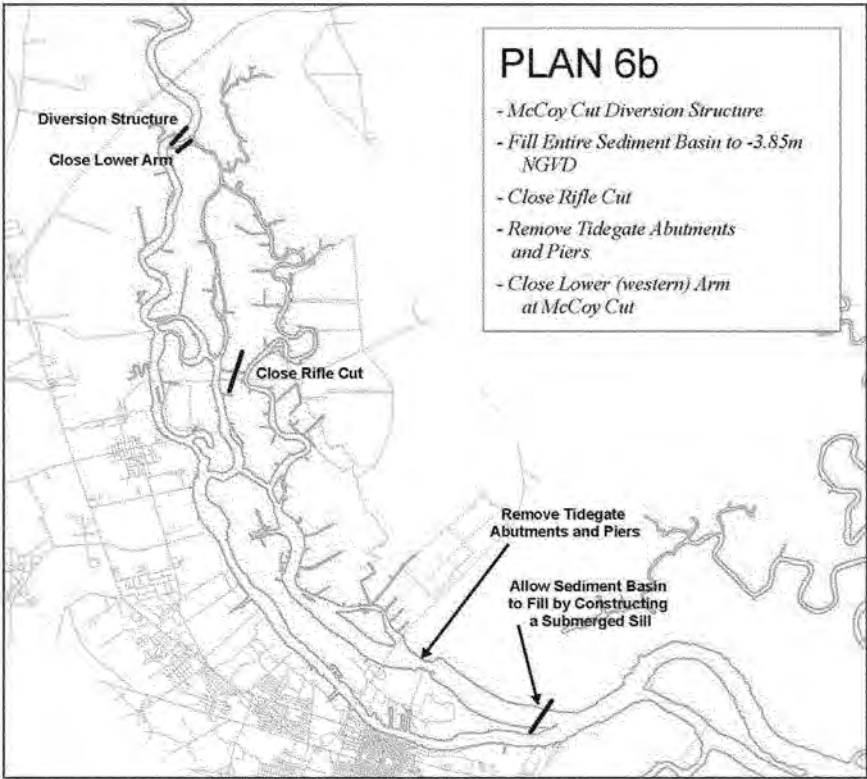




Figure 2: Plan 6b (proposed mitigation for 44 ft channel depth)



## Hydrodynamic Model Input

The plans were evaluated using the 3D hydrodynamic model EFDC. The run period and flow parameters are shown below and were specified by the Savannah Harbor Expansion Wetland Interagency Coordination Team and have been consistent throughout the study process. The group developed four model input scenarios for evaluation (See Table 1).

**Table 1:** Model Input Conditions

| <i>Run Scenario</i>      | <i>River Flow</i>      | <i>Sea Level Rise*</i>      | <i>Evaluation Period</i>     |
|--------------------------|------------------------|-----------------------------|------------------------------|
| Basic Evaluation         | <i>Average/Typical</i> | <i>Existing Sea Level</i>   | <i>1-March to 1-November</i> |
| Sensitivity Analysis #1  | <i>Low Flow/Dry</i>    | <i>Existing Sea Level</i>   | <i>1-March to 1-November</i> |
| Sensitivity Analysis #2A | <i>Average/Typical</i> | <i>25 cm Sea Level Rise</i> | <i>1-March to 1-November</i> |
| Sensitivity Analysis #2B | <i>Average/Typical</i> | <i>50 cm Sea Level Rise</i> | <i>1-March to 1-November</i> |

*\*25 and 50 cm sea level rise conditions were specified by the Interagency Coordination Team and are based on EPA and NOAA projections.*

Average/typical river flows needed for the Basic Evaluation and Sensitivity Analysis #2A and B were determined using recorded gage data for Savannah River at Clyo, GA. The EFDC model has continuous input boundary conditions for a 7 year period (1997 – 2003) available for simulation. 1997 was found to have flow conditions representative of the long term average flows. The flow boundary conditions for Sensitivity Analysis #1 are low flow or dry year conditions. Using the recorded gage data at Clyo, GA, 2001 (March through October) was considered to be a low flow/dry period.

The two sea level rise conditions used in Sensitivity Analysis #2A and B were modeled by adding an additional 25 or 50 cm, depending on the run scenario, to the water surface elevations on the open ocean boundary cells. The sea level rise sensitivity analyses are based only on a change in the ocean boundary water surface elevation. There was no consideration of any potential change in the ocean boundary salinity density in this modeling effort.

All other model boundary inputs remain unaltered and correspond to the run time of 1 March to 1 November for 1997 or 2001, depending on the run scenario being modeled.

## Output Presented

There are three types of maps presented in this report:

- 1- *Surface Salinity Difference Maps*- Maps show the change in riverine salinity at each EFDC grid cell between the existing condition and each mitigation plan. Salinity values are predicted using the hydrodynamic model (EFDC) and were computed for the 10% and 50% exceedance values. The grid cells are color coded to show the salinity differences. The grey shading is used to show cells that have lower salinity values than the existing condition (i.e.

deepening impacts have been reduced to 0, and, in fact, show improvement over the existing condition).

- 2- *Bottom Salinity Difference Maps*- Maps show the change in riverine salinity at each EFDC grid cell between the existing condition and each mitigation plan. Salinity values are predicted using the hydrodynamic model (EFDC) and were computed for the 10% and 50% exceedance values. The grid cells are color coded to show the salinity differences. The grey shading is used to show cells that have lower salinity values than the existing condition (i.e. deepening impacts have been reduced to 0, and, in fact, show improvement over the existing condition).
- 3- *Freshwater Threshold Maps*- Maps show the change in the freshwater threshold in the river. The threshold is based on the EFDC modeling 50% exceedance, surface salinity value. The threshold marks the line where salinity values change from below 0.5ppt to above 0.5ppt and vice versa.
- 4- *Predicted River Salinity from the Hydrodynamic Model (EFDC)*- The EFDC model grid is shown with 50% exceedance surface salinities broken into 5 categories: 0-0.5 ppt, 0.6-1.0 ppt, 1.1-2.0 ppt, 2.1-4.0 ppt, 4.0-32.5 ppt.
- 5- *Estimated Marsh Salinity Contour Lines*- Marsh salinity contour lines are shown that break the marsh into 5 categories: 0-0.5 ppt, 0.6-1.0 ppt, 1.1-2.0 ppt, 2.1-4.0 ppt, > 4.0 ppt. The first category 0-0.5 ppt represents freshwater marsh. The contour lines were extrapolated into the marsh from the riverine hydrodynamic model results shown in the maps described above 4- *Predicted River Salinity from the Hydrodynamic Model*.

Because of the subjectivity of developing the contour lines for this set of maps, two measures were taken to ensure the results are valid. First, all of the maps were developed by the same person to eliminate bias due to the possibility of different perspectives. Second, verification was done to determine a level of confidence in comparing the results. The verification was done by testing the repeatability of drawing the contour line for the freshwater zone (0-0.5 ppt) for three randomly selected maps. For the repeatability test, first the same person redrew the freshwater zone. Second a different person redrew the freshwater zone. Both of these tests produced acreages with less than a 2% difference from the original acreages. From this test, the results are considered valid within +/- 50 acres.

## Results

In viewing and discussing the results of the mitigation plans it is important to remember the following:

- 1- The marsh impacts are evaluated by looking at the *net* acreage. This is especially important when discussing the impacts to freshwater marshes. The net acreage value is based on the conditions of the marsh after the project is in place. It does not take into consideration what the marsh salinity is under current conditions. For example, a mitigation plan may gain freshwater marsh on Back River and lose freshwater marsh on Front River. The net acreage

may meet the impact criteria, but in reality, it may take some time for a marsh to convert from a brackish marsh to a freshwater marsh.

- 2- The model has a limited ability to evaluate specific design parameters of a true diversion structure. The diversion structure described in each of the plans was modeled by altering the Front River width just downstream of McCoys Cut. By narrowing the passage on Front River the water surface elevation at the mouth of McCoys Cut was increased. The rise in elevation encourages more water to go down McCoys Cut. EFDC does not have options for inserting a defined diversion structure but narrowing the River channel in this area is essentially what a diversion structure will do.

Several different "sizes" of diversion structures were evaluated during the development of the mitigation plans by varying the widths of the narrow passage on Front River. This allowed us to vary the amount of flow diverted down McCoys Cut. The structure modeled in Mitigation Plan 3, and each of the additional plans in this report, was found to be the most effective at diverting freshwater flows through McCoys Cut of the several different "sizes" evaluated. A future design task will be required to develop specifications for a diversion structure that performs as in the model simulation.

The evaluation of each of the mitigation plans included review of the effects the plan has on the tide range and velocities. It was concluded that both of the selected plans do not reduce the tide range significantly in Back River, Little Back River, or Middle River. Velocities for all the additional plans are close to existing conditions. However, as expected, removing the abutments and piers in the two plans do increase velocities in Back River and Little Back River slightly above the existing condition.

Results from the modeling are presented in the following tables. Table 2 shows estimated marsh salinity impacts based on the mapping described in *5-Estimated Marsh Salinity Contour Lines* above. The contour line verification described in the previous section suggests the acreages are valid within +/- 50 acres. Table 3 shows the predicted salinities (on Little Back River at the entrance of Lucknow Canal).

**Table 2:** Estimated Marsh Salinity Acreage Impacts

*All values listed are in acres and are based on the Salinity Contour Maps derived from EFDC output.*

**Basic Evaluation**1997 (avg flow) NO Sea Level Rise

| Salinity Range | Existing No Deepening No Mitigation | 44 ft Depth & Mitigation Plan 6b | 45 ft Depth & Mitigation Plan 6a | 46 ft Depth & Mitigation Plan 6a | 48 ft Depth & Mitigation Plan 6a |
|----------------|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0-0.5 ppt      | 4072                                | 4394                             | 4040                             | 3871                             | 3735                             |
| 0.6-1.0 ppt    | 864                                 | 1137                             | 1781                             | 1650                             | 1340                             |
| 1.1-2.0 ppt    | 555                                 | 749                              | 588                              | 862                              | 1191                             |
| 2.1-4.0 ppt    | 834                                 | 855                              | 745                              | 700                              | 790                              |
| >4 ppt         | 2506                                | 1698                             | 1678                             | 1749                             | 1776                             |

**Sensitivity Analysis #1** 2001 (low flow) NO Sea Level Rise

| Salinity Range | Existing No Deepening No Mitigation | 44 ft Depth & Mitigation Plan 6b | 45 ft Depth & Mitigation Plan 6a | 46 ft Depth & Mitigation Plan 6a | 48 ft Depth & Mitigation Plan 6a |
|----------------|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0-0.5 ppt      | 2208                                | 3128                             | 3111                             | 2886                             | 2570                             |
| 0.6-1.0 ppt    | 767                                 | 459                              | 674                              | 825                              | 845                              |
| 1.1-2.0 ppt    | 1322                                | 1342                             | 981                              | 822                              | 786                              |
| 2.1-4.0 ppt    | 1076                                | 1564                             | 1848                             | 2009                             | 2236                             |
| >4 ppt         | 3458                                | 2339                             | 2218                             | 2291                             | 2394                             |

**Sensitivity Analysis #2A** 1997 (avg flow) 25cm Sea Level Rise

| Salinity Range | Existing No Deepening No Mitigation | 44 ft Depth & Mitigation Plan 6b | 45 ft Depth & Mitigation Plan 6a | 46 ft Depth & Mitigation Plan 6a | 48 ft Depth & Mitigation Plan 6a |
|----------------|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0-0.5 ppt      | 3507                                | 3659                             | 3740                             | 3594                             | 3536                             |
| 0.6-1.0 ppt    | 1118                                | 1401                             | 1500                             | 1400                             | 713                              |
| 1.1-2.0 ppt    | 551                                 | 972                              | 1098                             | 1283                             | 1790                             |
| 2.1-4.0 ppt    | 969                                 | 1000                             | 758                              | 796                              | 977                              |
| >4 ppt         | 2687                                | 1799                             | 1737                             | 1760                             | 1815                             |

**Sensitivity Analysis #2B** 1997 (avg flow) 50cm Sea Level Rise

| Salinity Range | Existing No Deepening No Mitigation | 44 ft Depth & Mitigation Plan 6b | 45 ft Depth & Mitigation Plan 6a | 46 ft Depth & Mitigation Plan 6a | 48 ft Depth & Mitigation Plan 6a |
|----------------|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 0-0.5 ppt      | 2809                                | 3462                             | 3554                             | 3512                             | 3297                             |
| 0.6-1.0 ppt    | 1255                                | 1099                             | 793                              | 484                              | 558                              |
| 1.1-2.0 ppt    | 927                                 | 1305                             | 1641                             | 1909                             | 1874                             |
| 2.1-4.0 ppt    | 977                                 | 785                              | 988                              | 1139                             | 896                              |
| >4 ppt         | 2864                                | 2181                             | 1855                             | 1787                             | 2208                             |

Table 3: Predicted Salinity Values at Lucknow Canal Entrance  
50 / 10 percent exceedance salinity values (ppt)

|                                                                        | Existing<br>No Deepening<br>No Mitigation | 44 ft Depth &<br>Mitigation<br>Plan 6b | 45 ft Depth &<br>Mitigation<br>Plan 6a | 46 ft Depth &<br>Mitigation<br>Plan 6a | 48 ft Depth &<br>Mitigation<br>Plan 6a |
|------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| <b>Basic Evaluation</b><br>1997 (avg flow) NO Sea Level Rise           | 0.02 / 0.14                               | 0.00 / 0.04                            | 0.00 / 0.04                            | 0.00 / 0.04                            | 0.00 / 0.05                            |
| <b>Sensitivity Analysis #1</b><br>2001 (low flow) NO Sea Level Rise    | 0.15 / 0.57                               | 0.05 / 0.33                            | 0.05 / 0.36                            | 0.06 / 0.42                            | 0.09 / 0.55                            |
| <b>Sensitivity Analysis #2A</b><br>1997 (avg flow) 25cm Sea Level Rise | 0.05 / 0.26                               | 0.01 / 0.08                            | 0.01 / 0.08                            | 0.01 / 0.10                            | 0.01 / 0.12                            |
| <b>Sensitivity Analysis #2B</b><br>1997 (avg flow) 50cm Sea Level Rise | 0.11 / 0.45                               | 0.03 / 0.17                            | 0.02 / 0.17                            | 0.02 / 0.19                            | 0.03 / 0.24                            |

All Salinities taken at EFDC grid cell 39\_114 located on Little Back River at the entrance of Lucknow Canal

## Conclusion

In summary, Mitigation Plans 6a and 6b are the proposed flow altering mitigation plans to reduce salinity impacts in the harbor. The model results show that the mitigation plans do reduce the salinity impacts due to deepening the navigation channel, and in some areas the plans provide suitable conditions for freshwater marsh where it currently does not exist.

It is interesting to note, that depending on which flow condition is focused on, the impacts are variable. The three Sensitivity Analysis show that Plans 6a and 6b reduce the net freshwater marsh loss to zero under the four depth scenarios when compared to the existing conditions. The Basic Evaluation output shows some of the depths continue to have impacts on freshwater marsh and will require other measures, outside of what is presented here, to fully mitigate for the loss of freshwater wetlands. The range of flow conditions modeled, provides a broad overview of the current harbor conditions and how they will be changed with the deepening project.

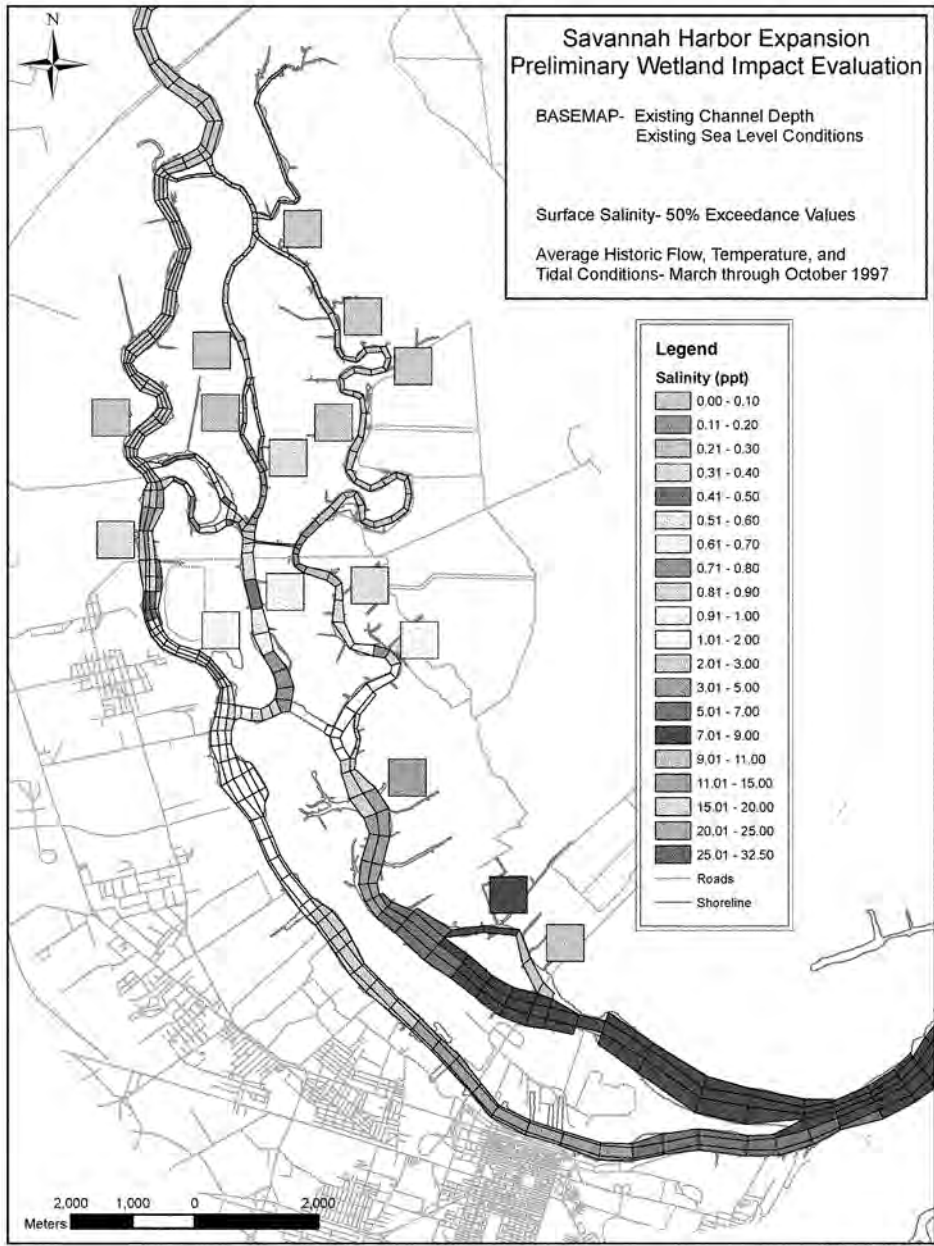
# **Existing Conditions**

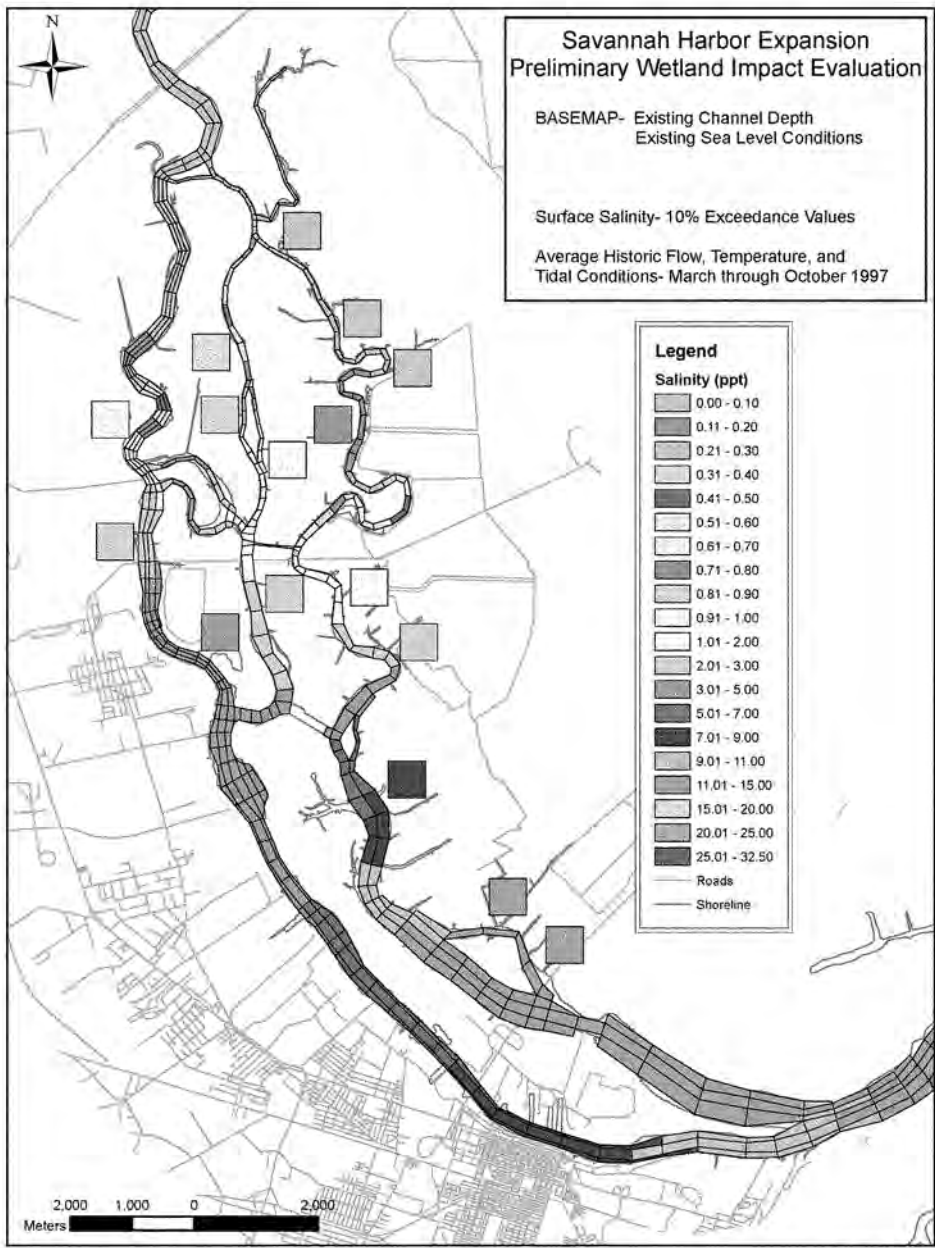
*No Deepening No Mitigation*

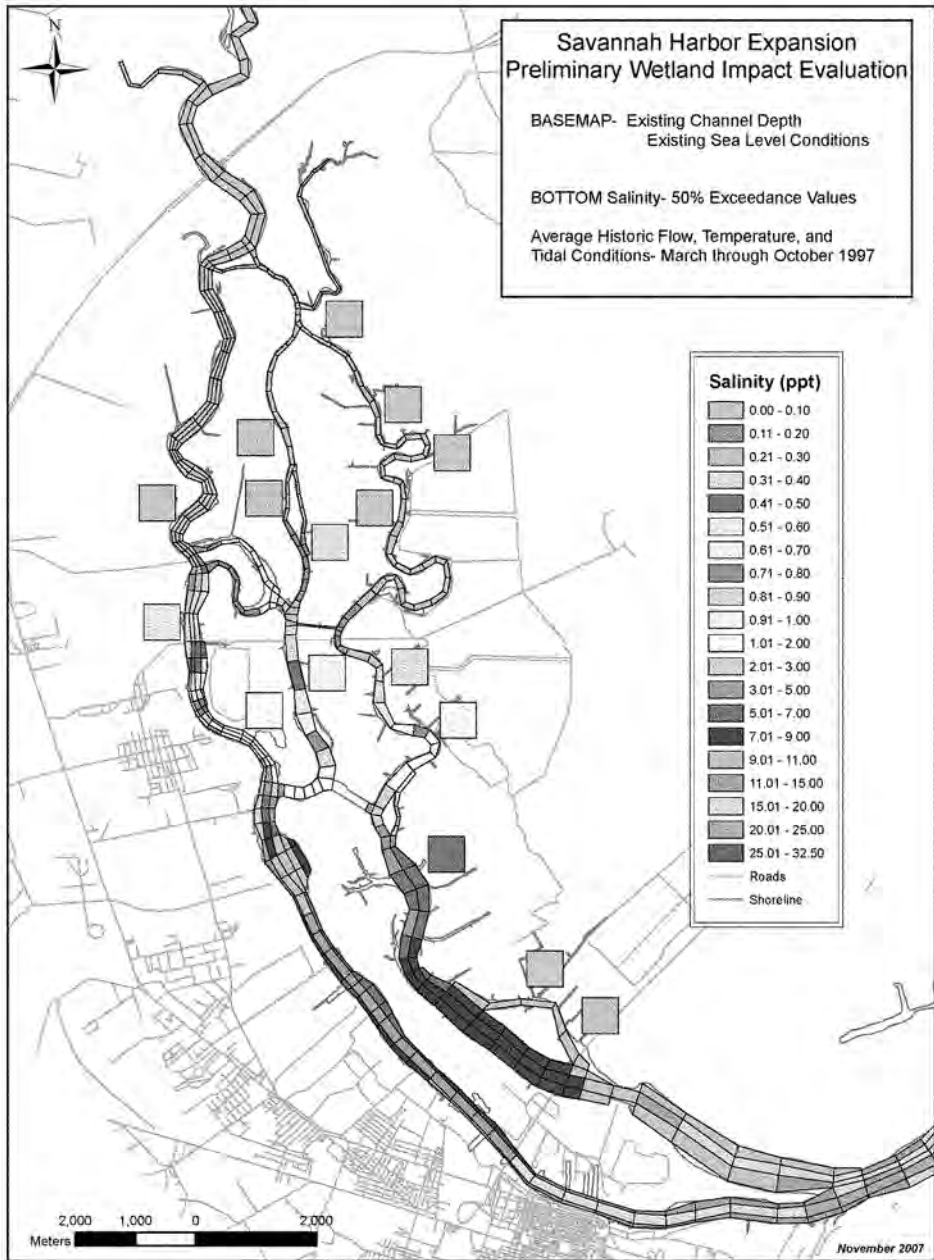


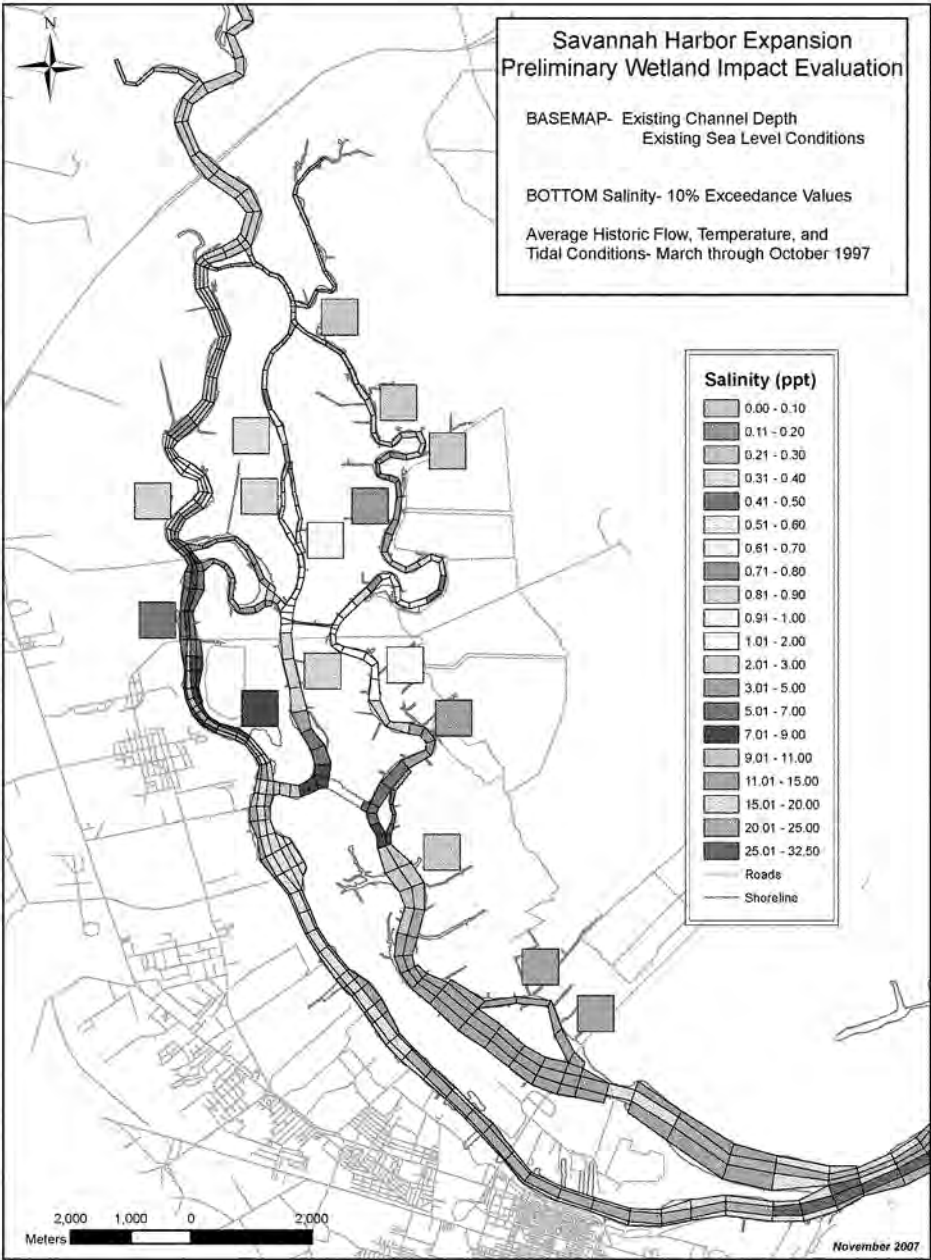
## *Basic Evaluation*

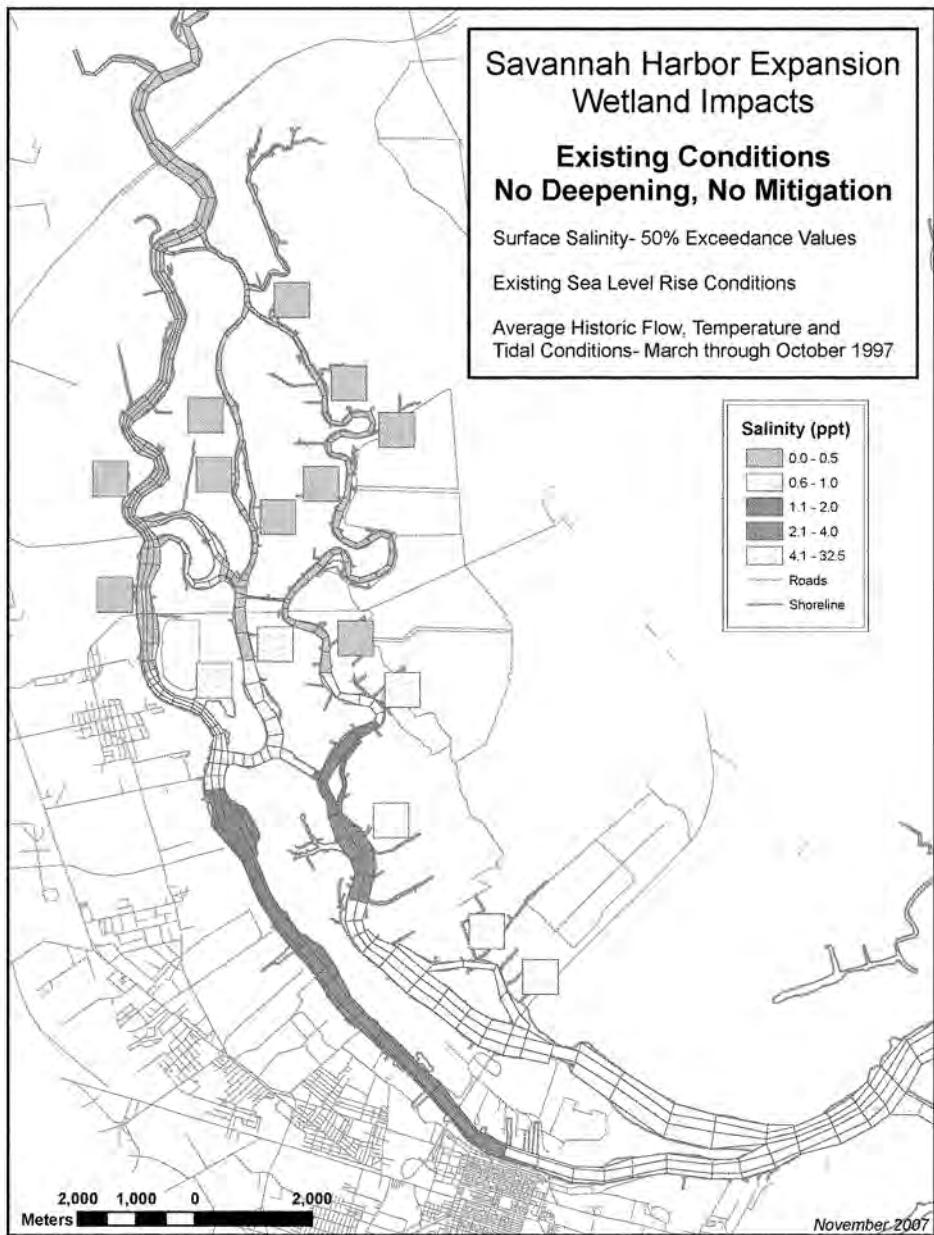
1997 (Average) Flow Conditions- No Sea Level Rise

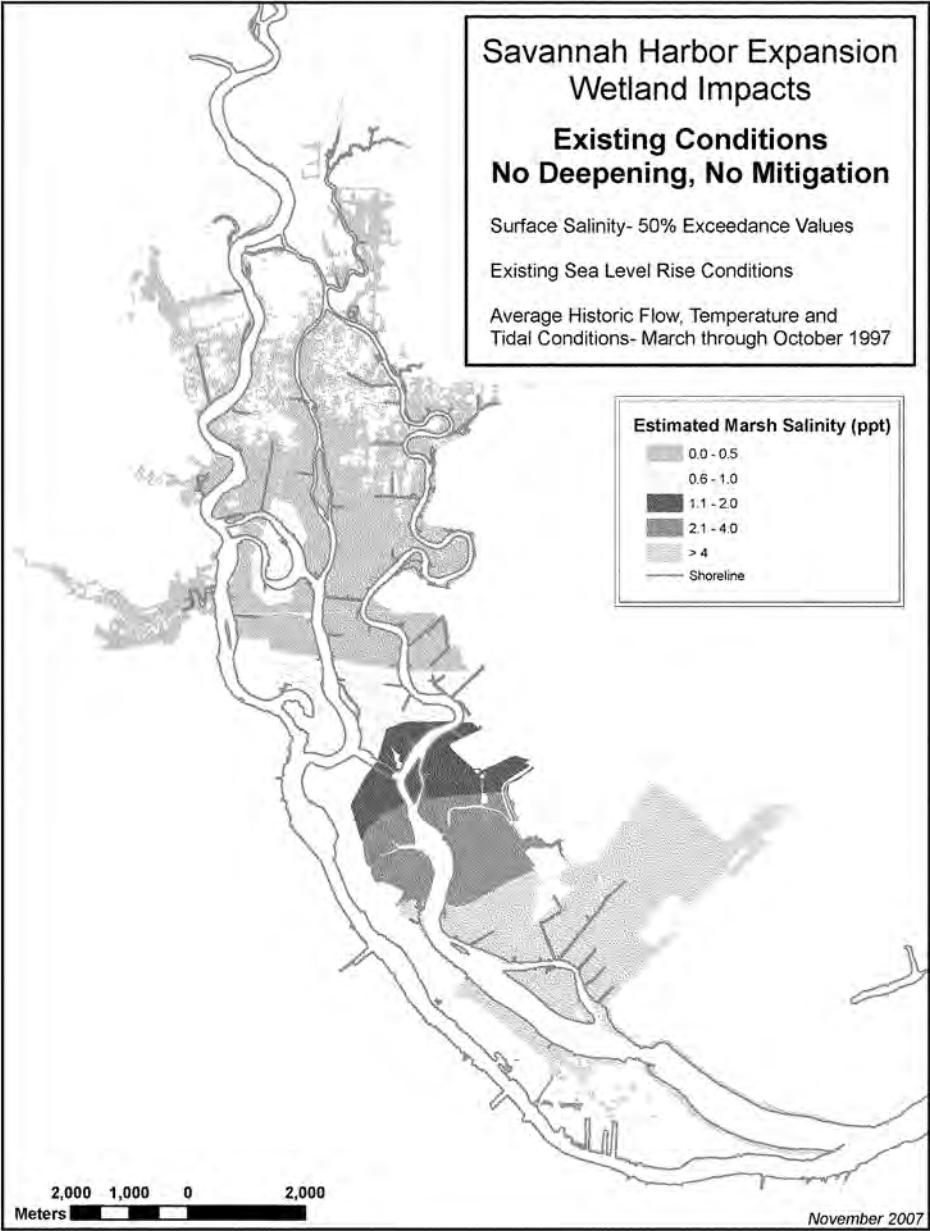








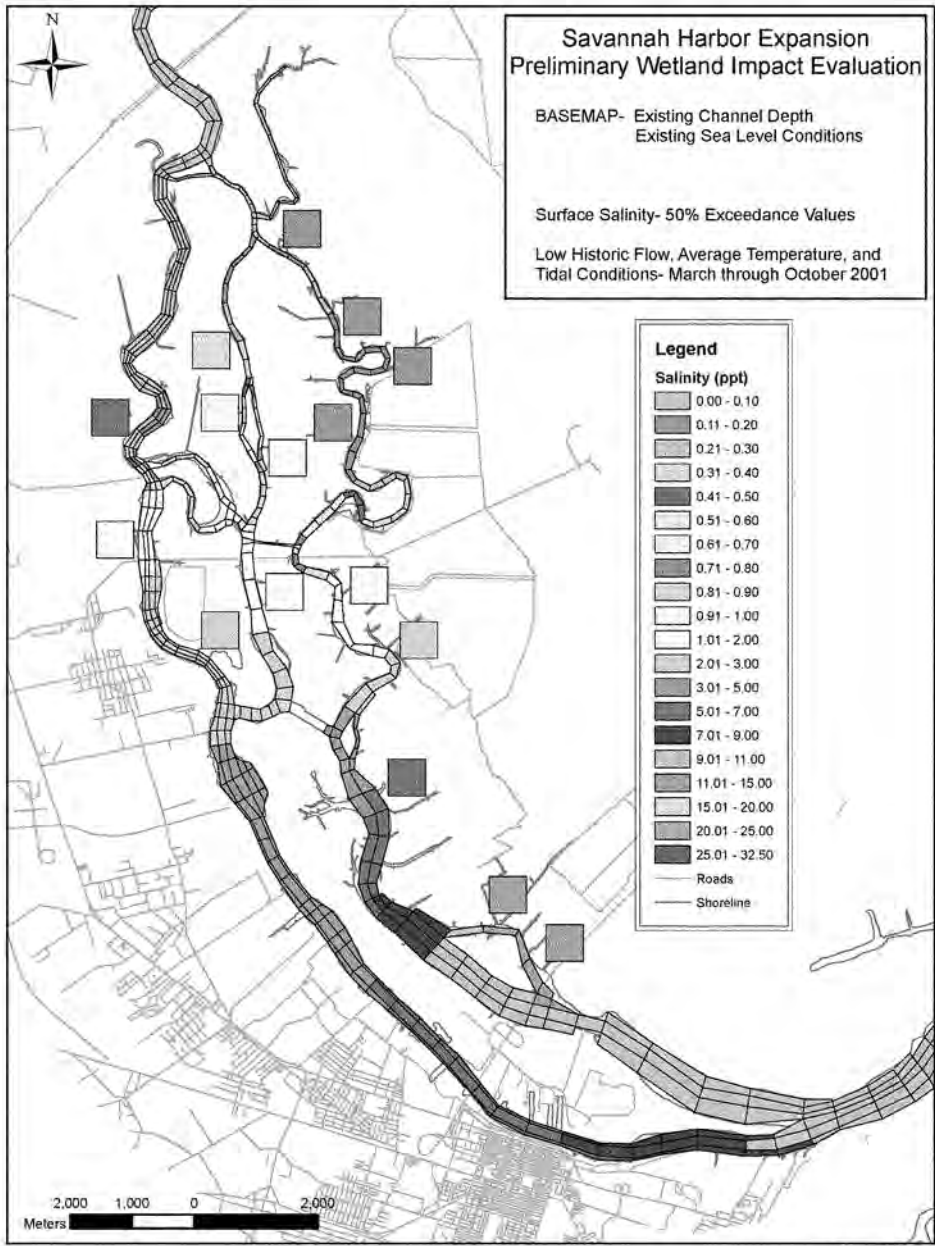


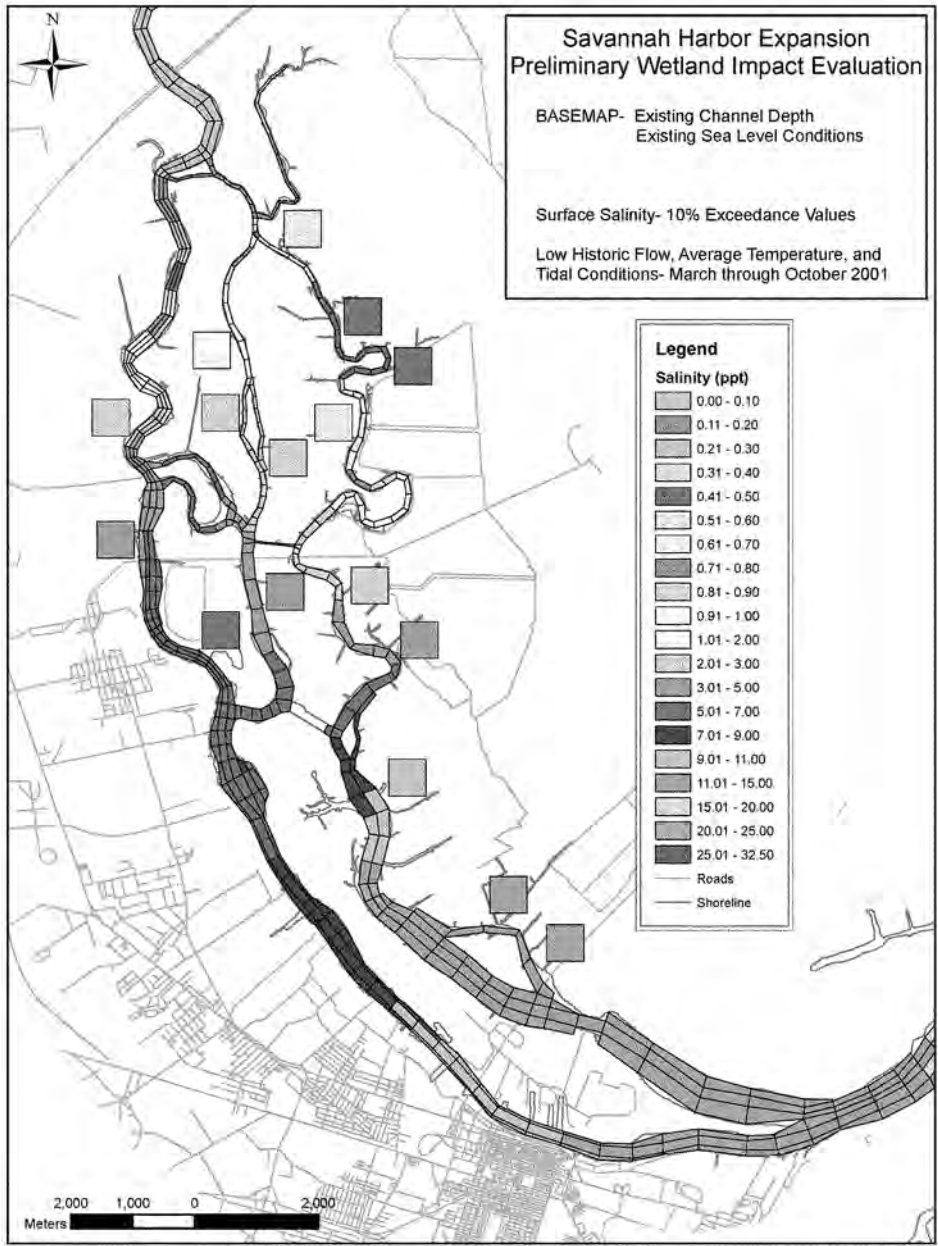


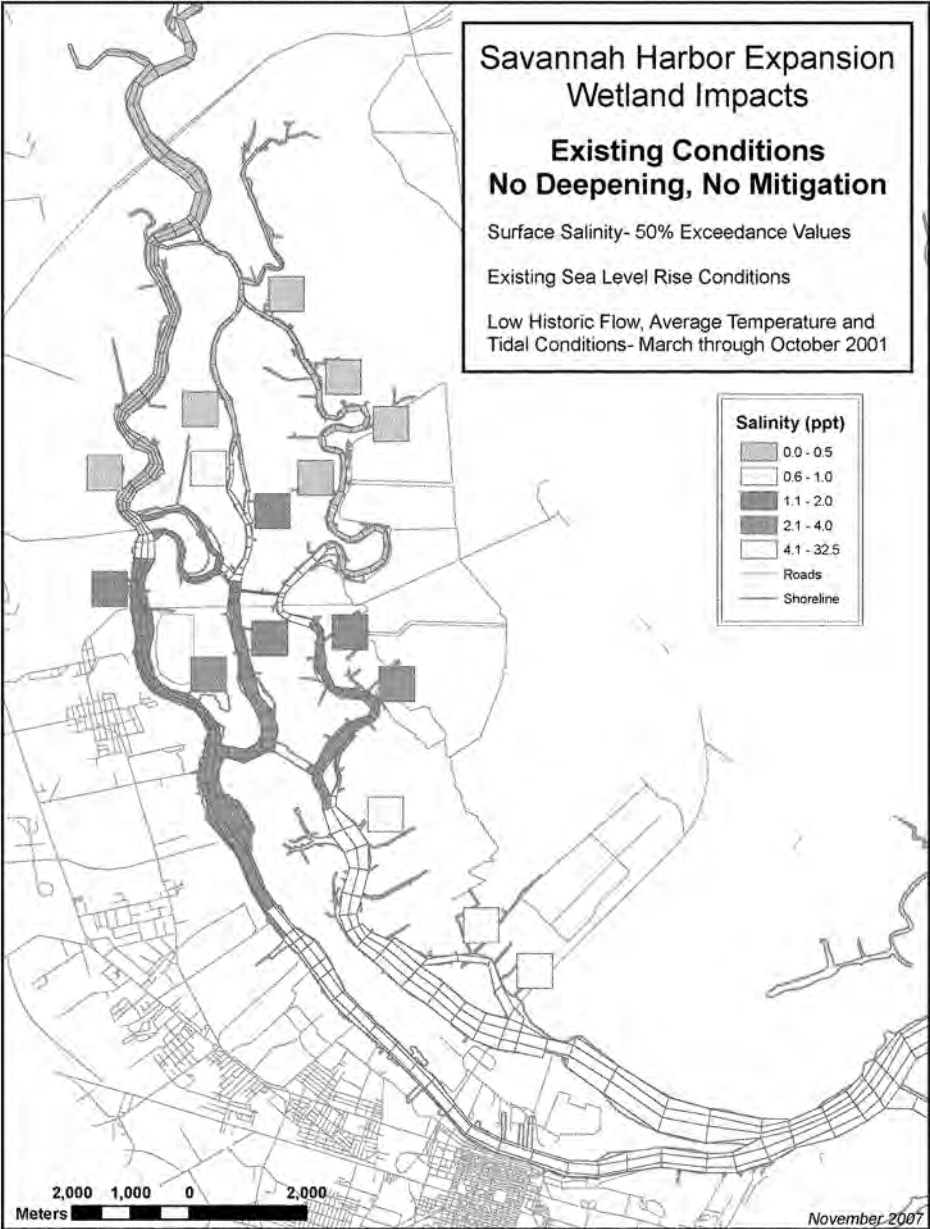
## *Sensitivity Analysis #1*

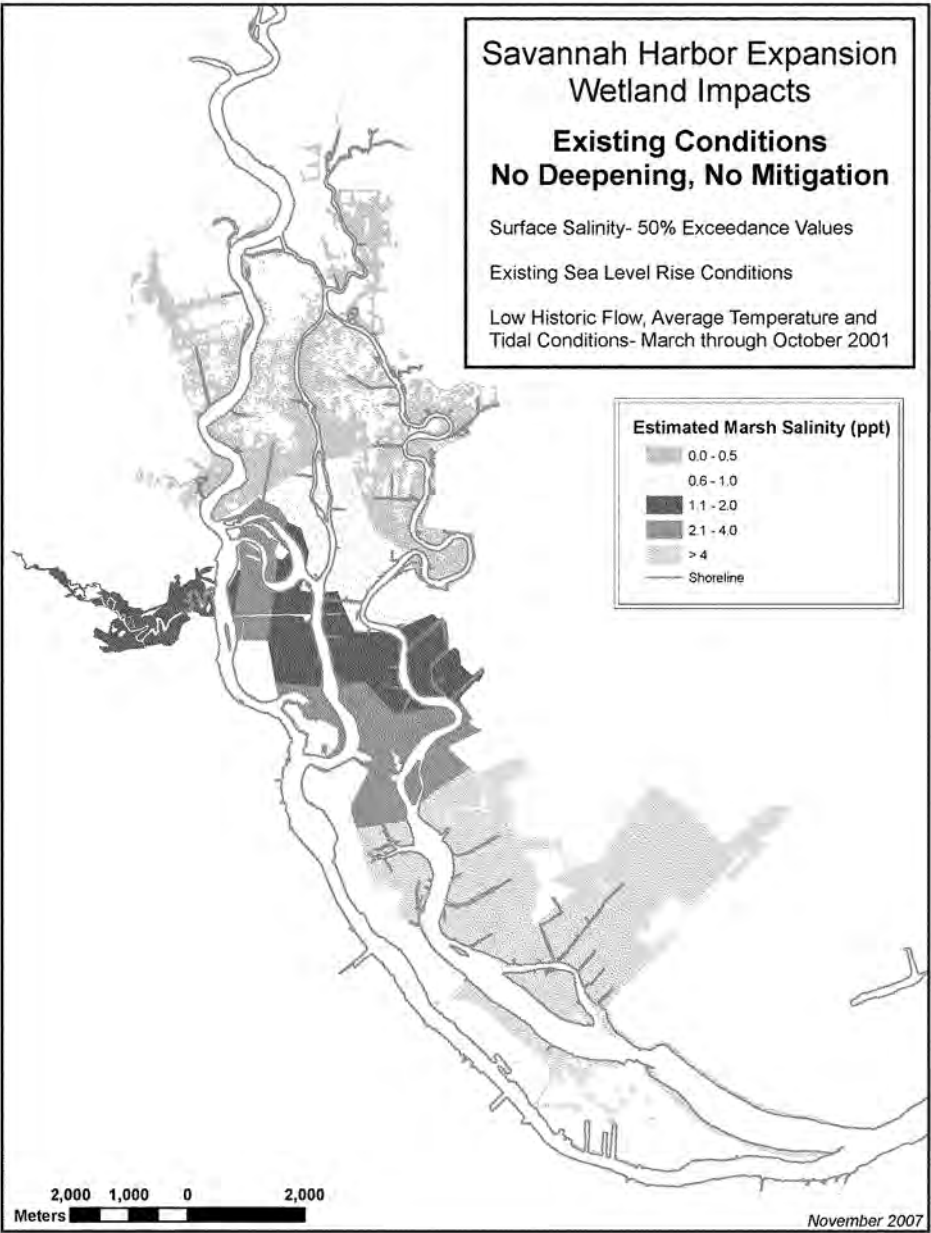
2001 (Low) Flow Conditions- No Sea Level Rise





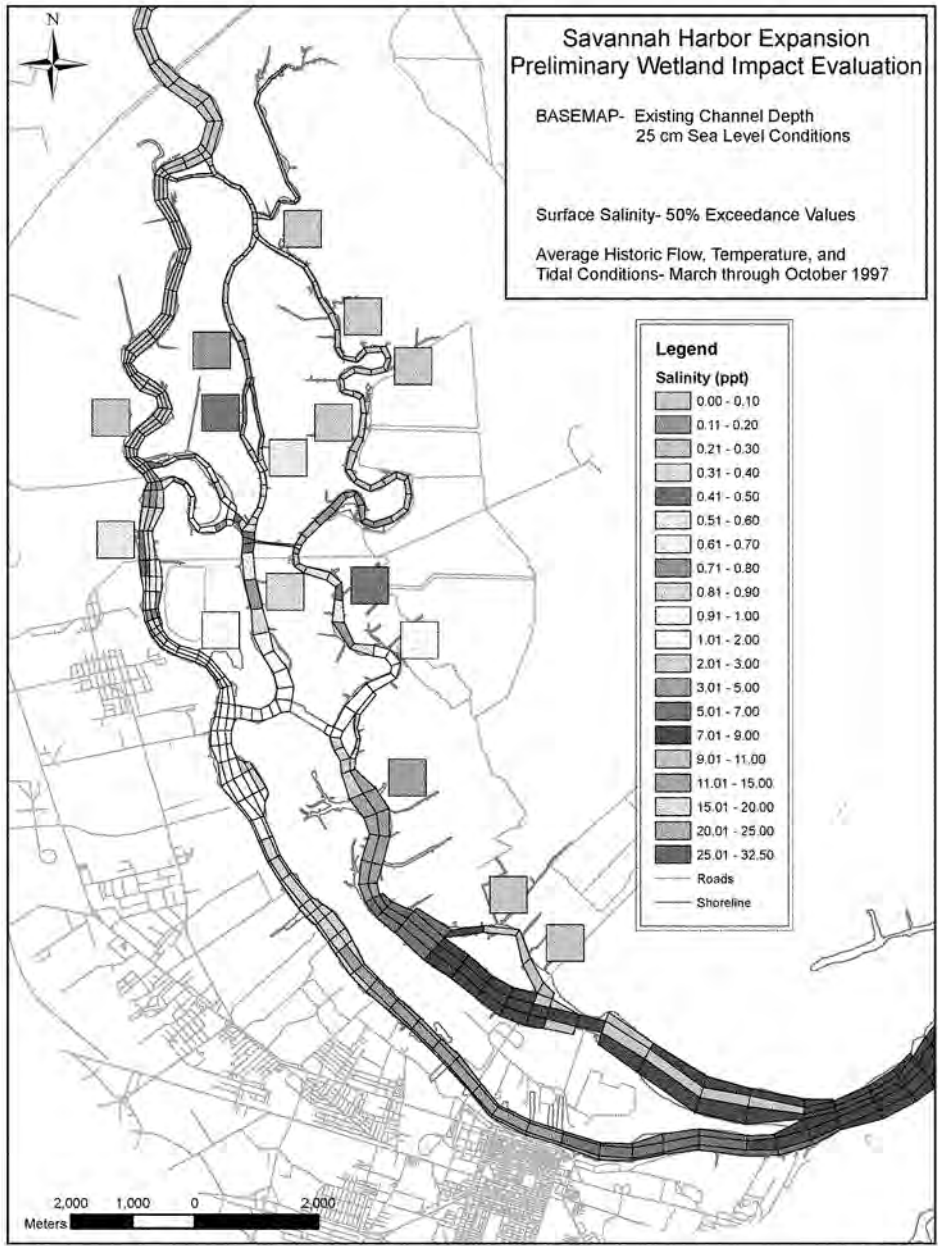


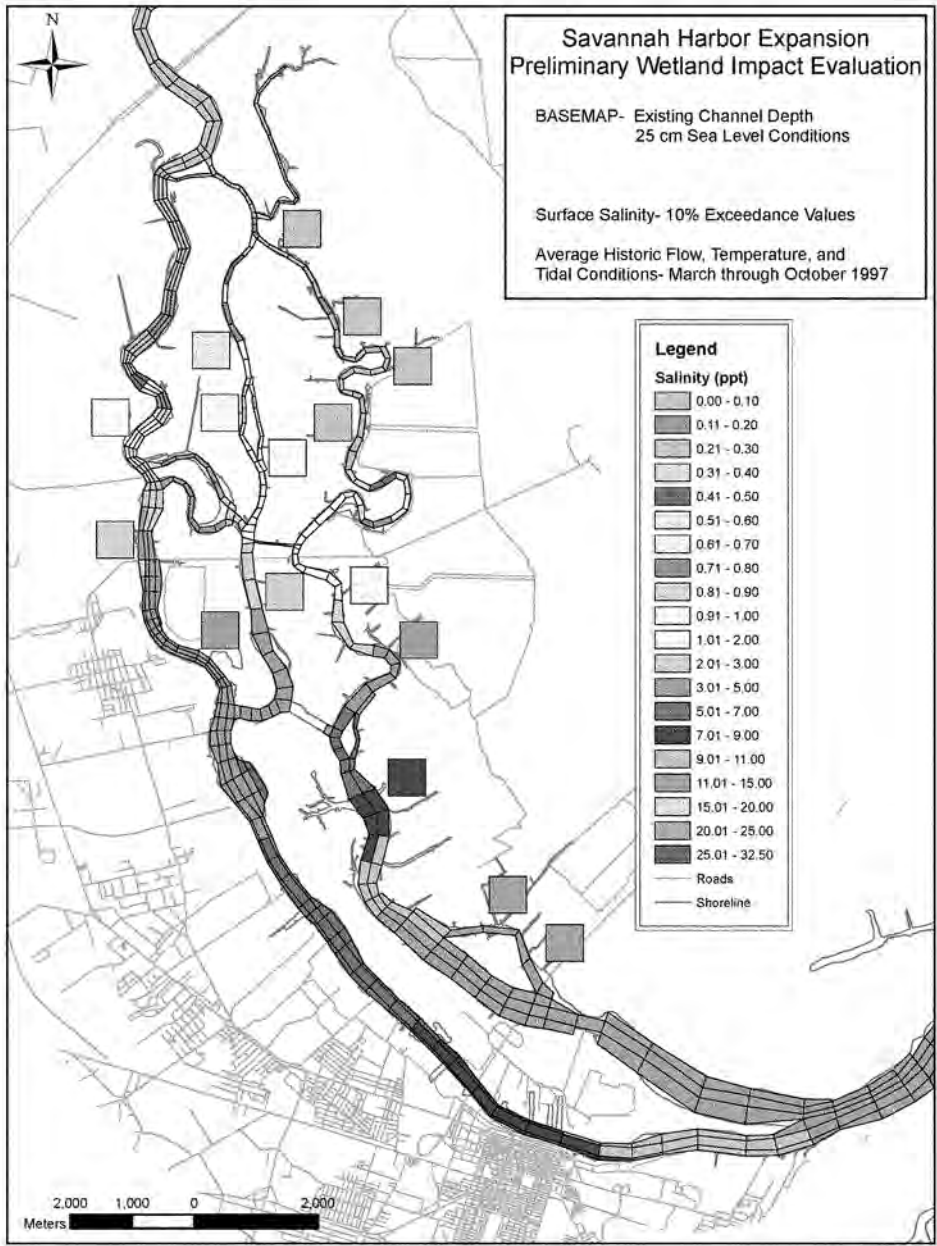


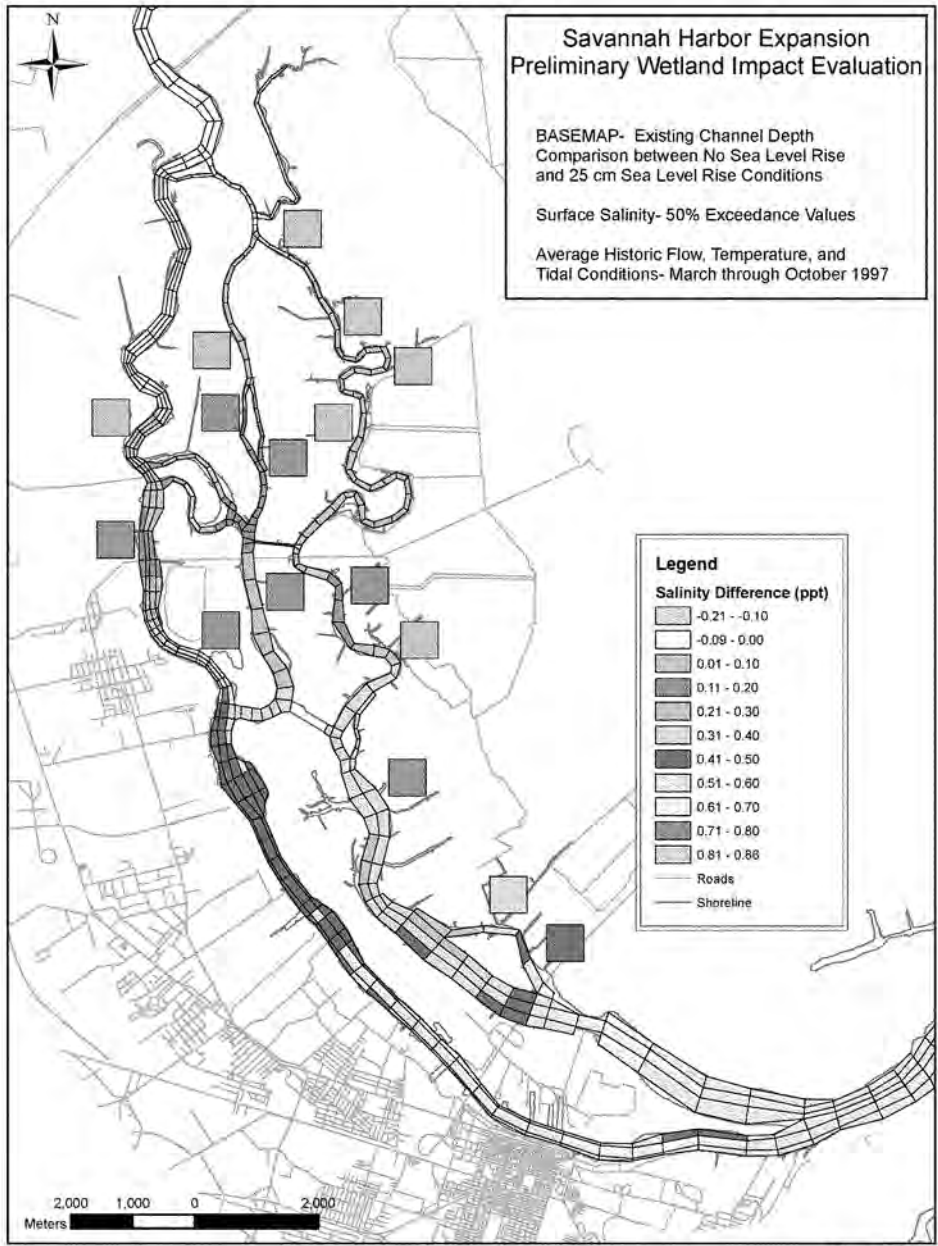


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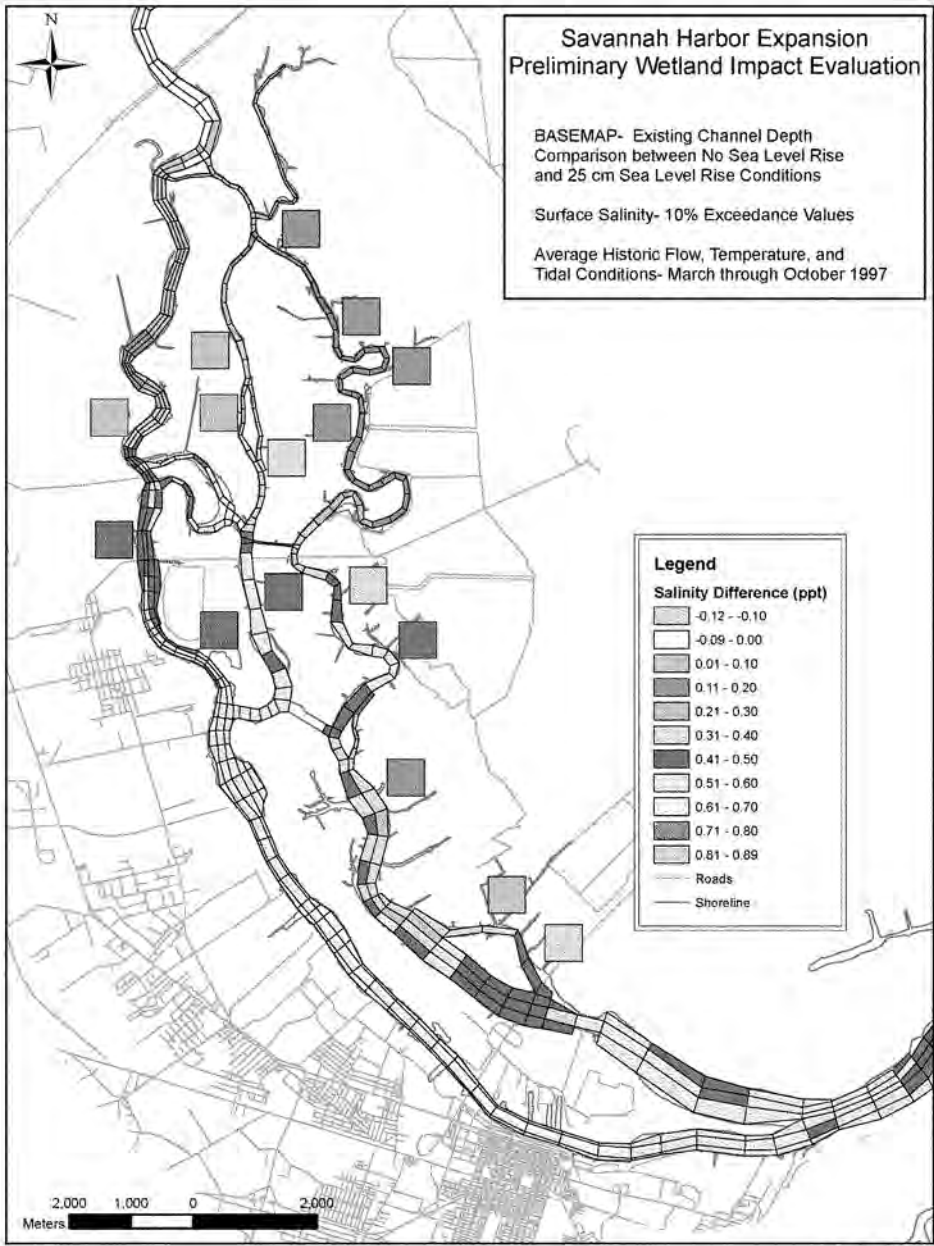
1997 (Average) Flow Conditions- 25cm Sea Level Rise

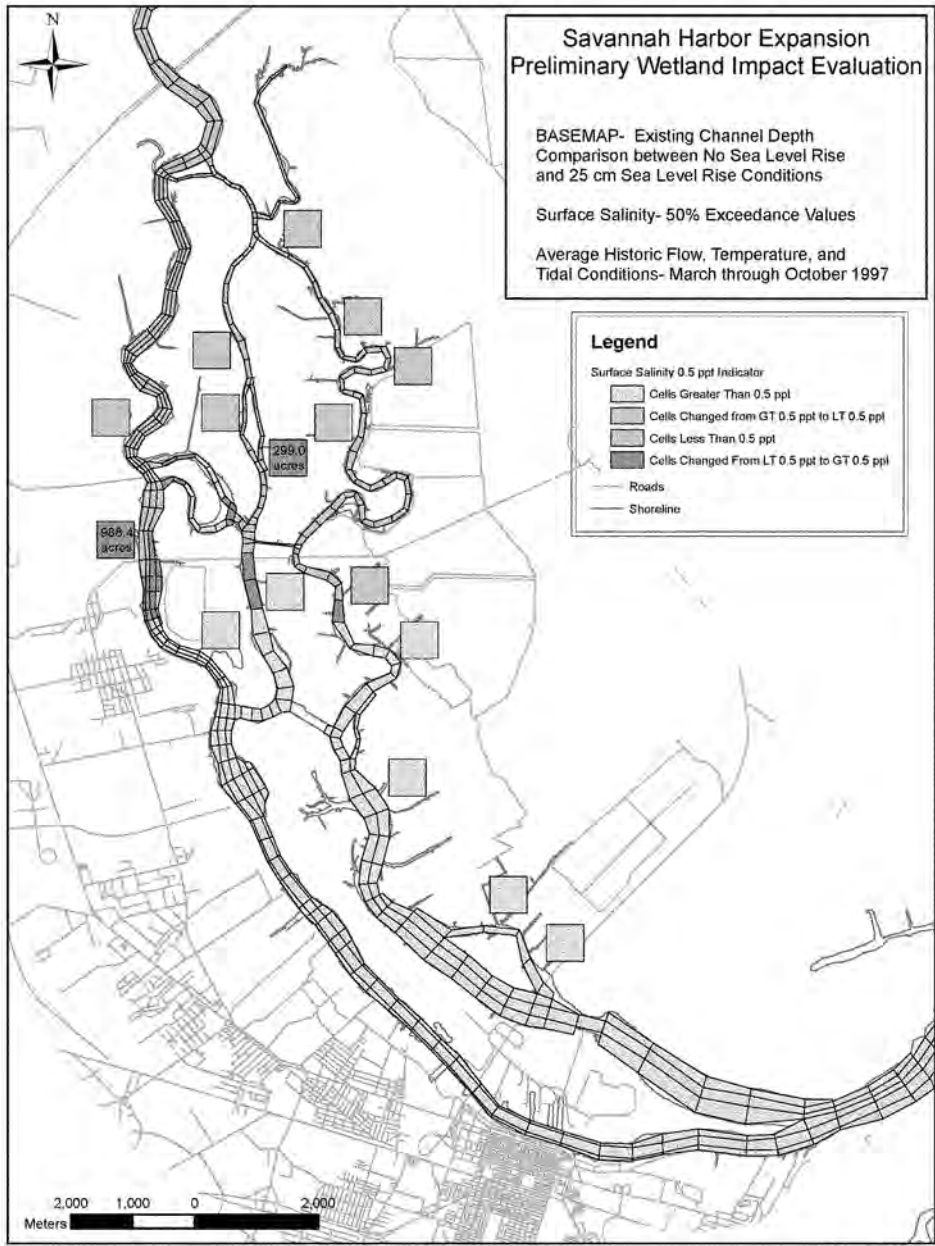


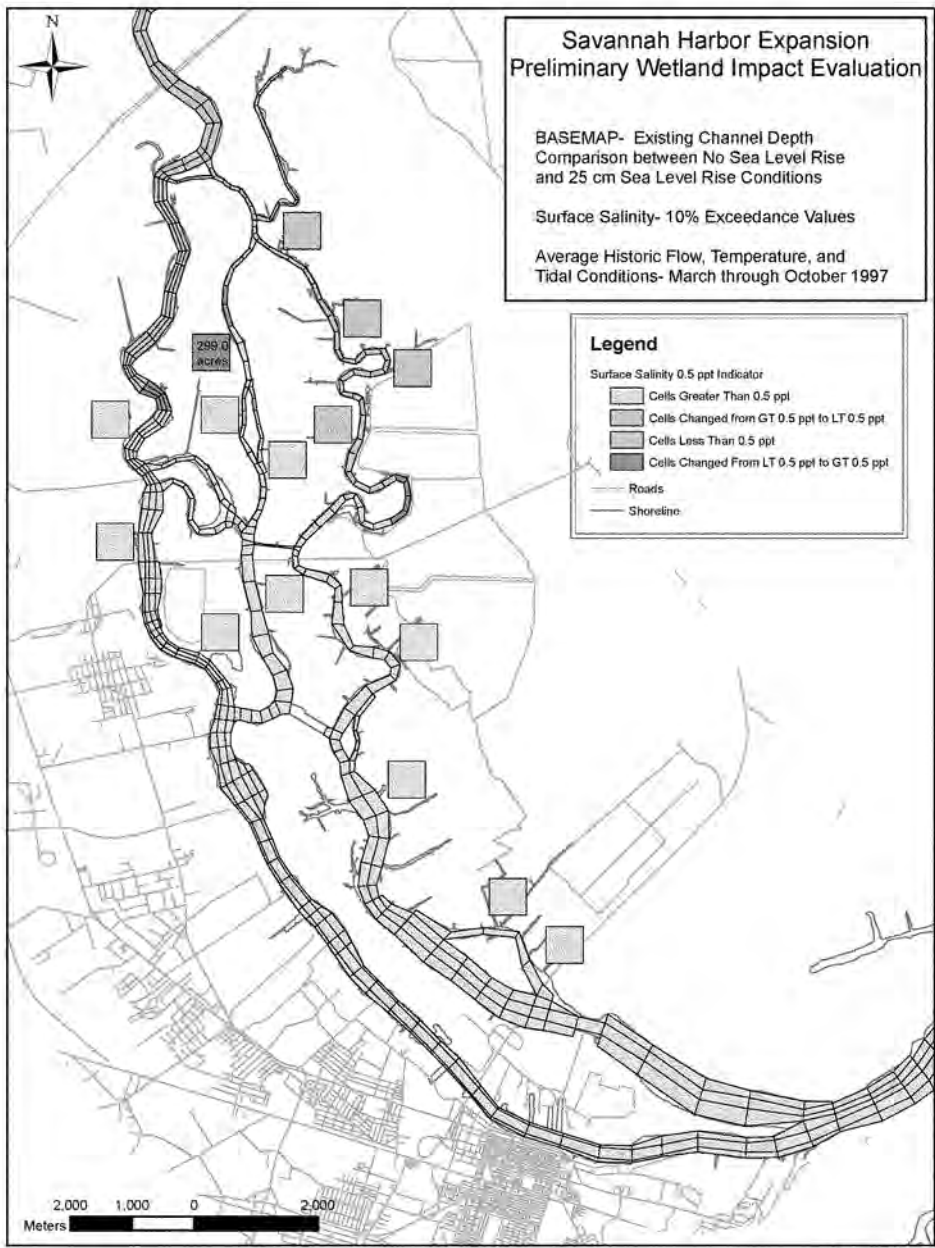


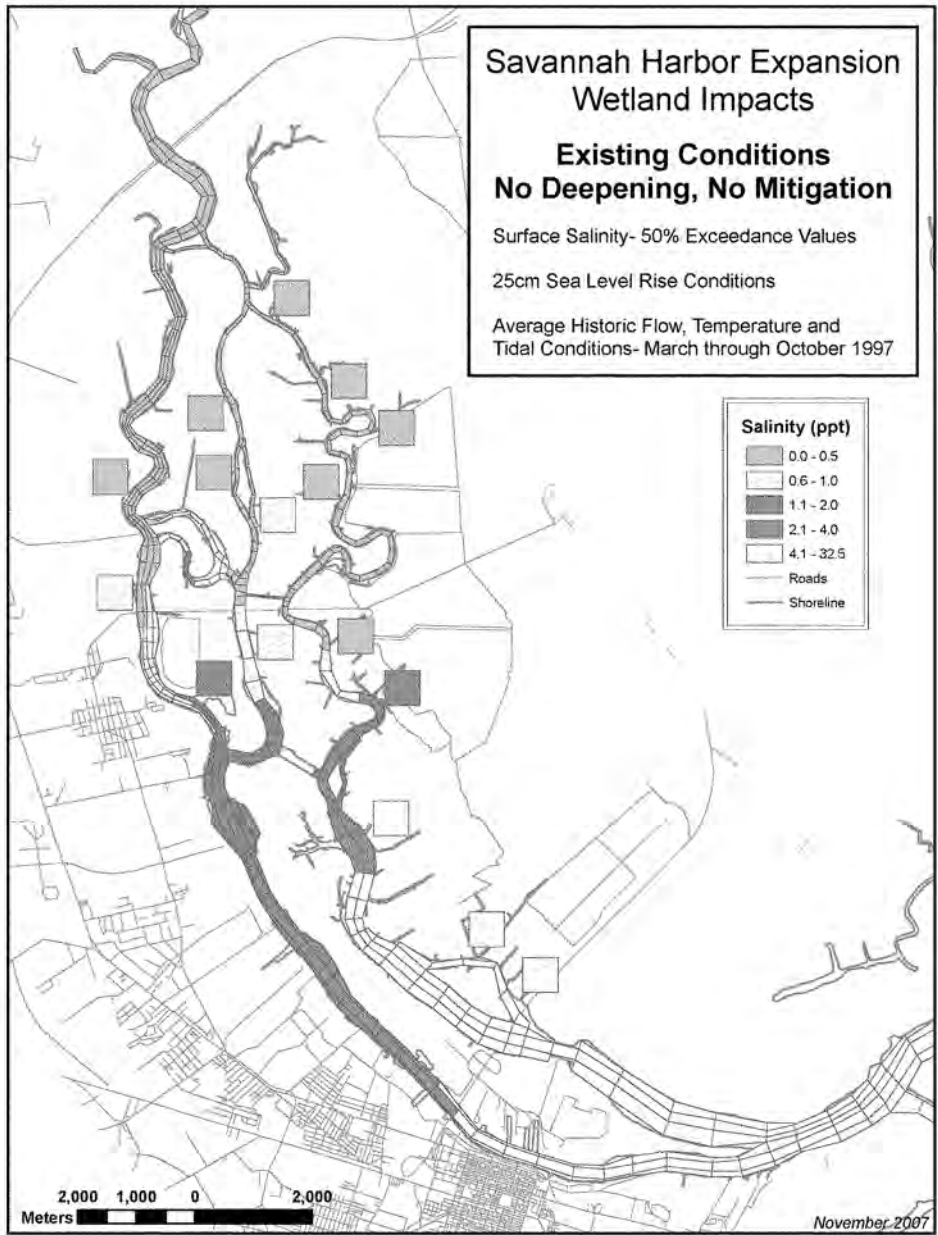


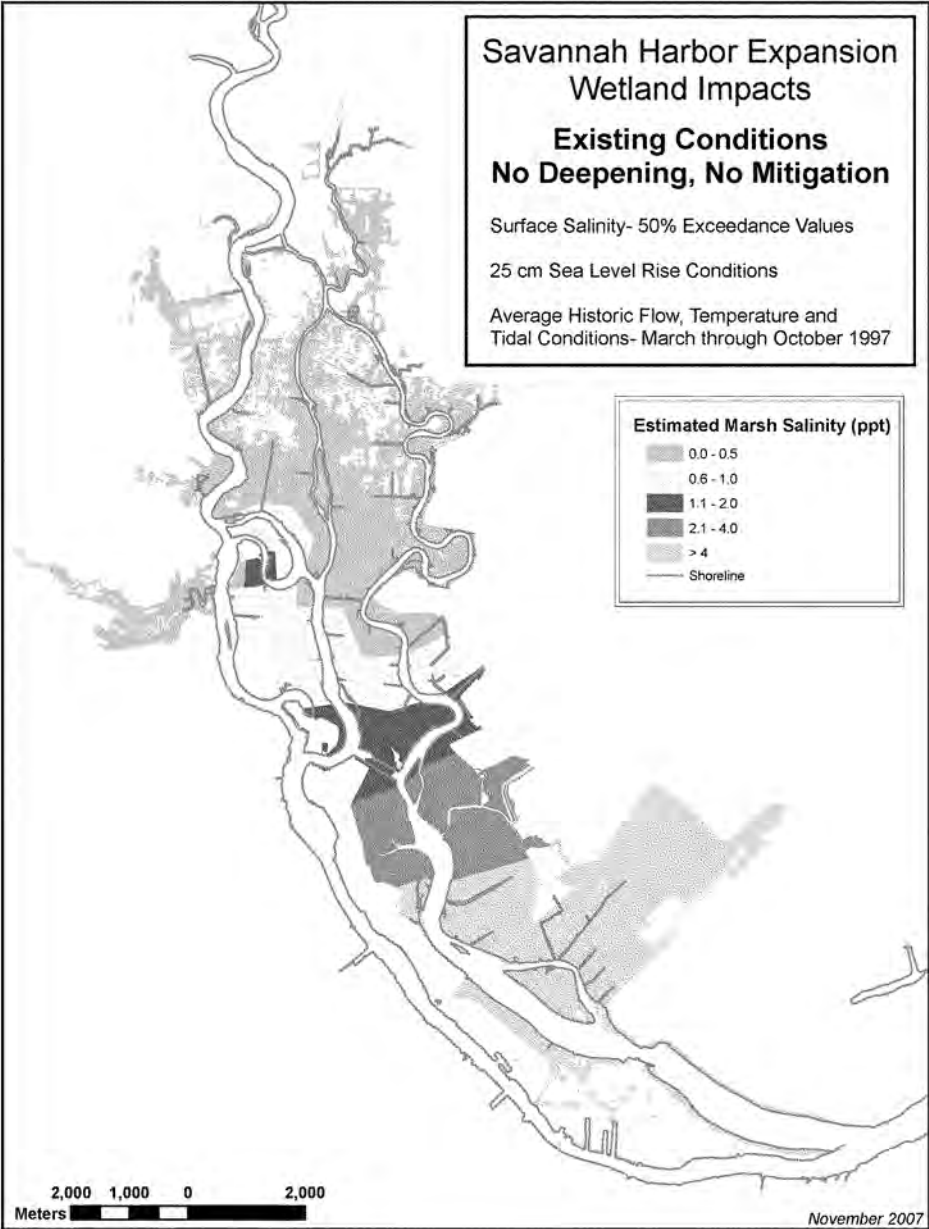






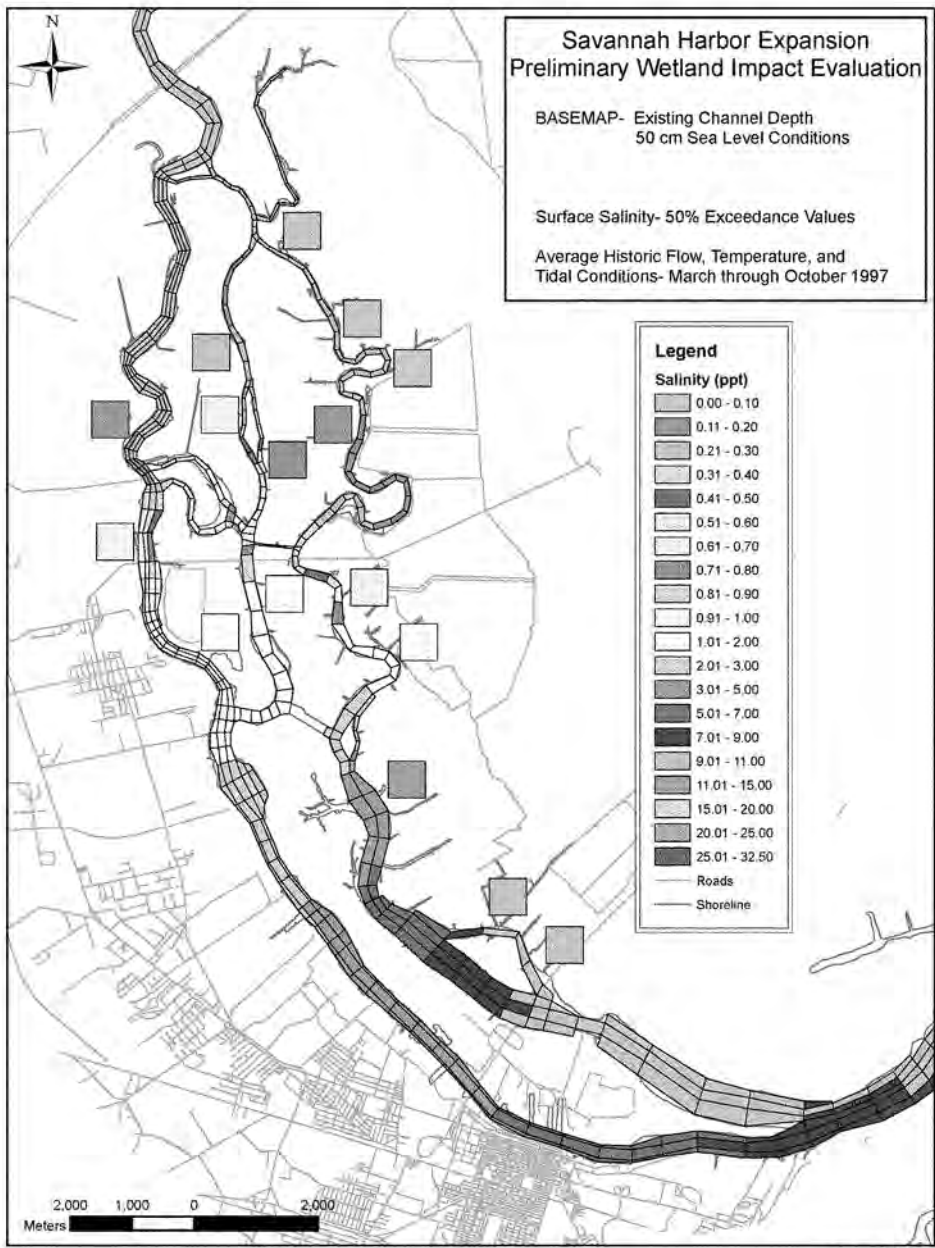


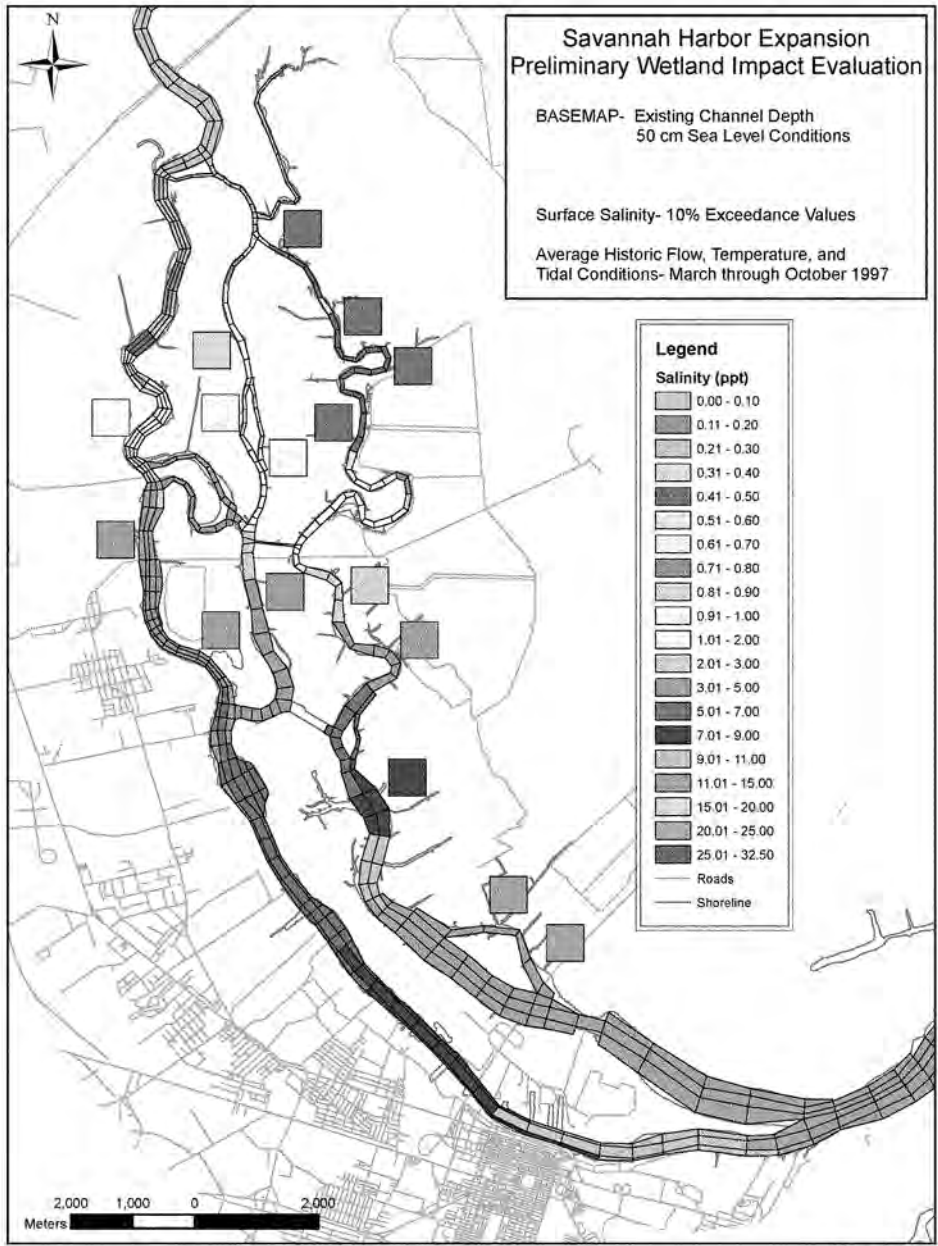




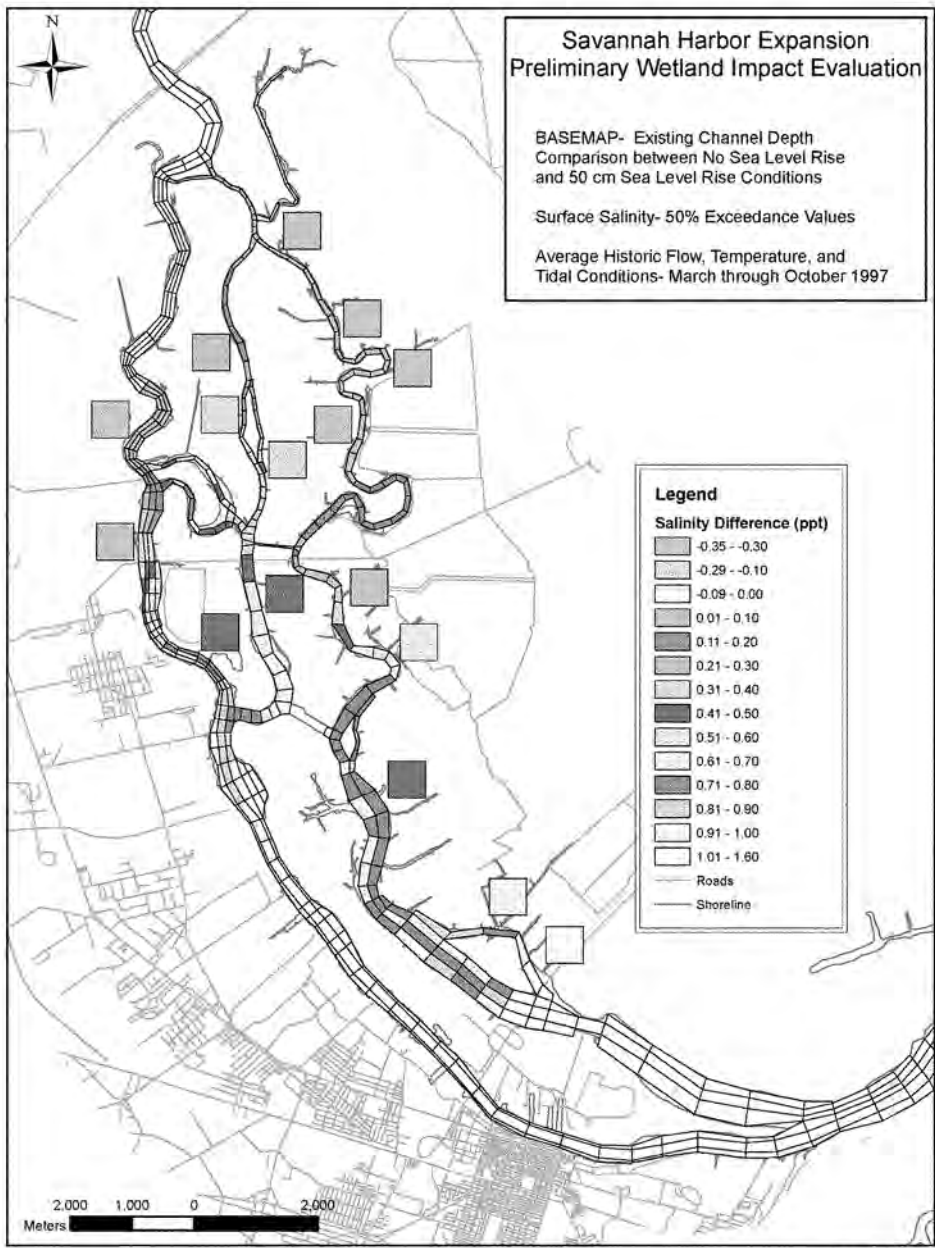
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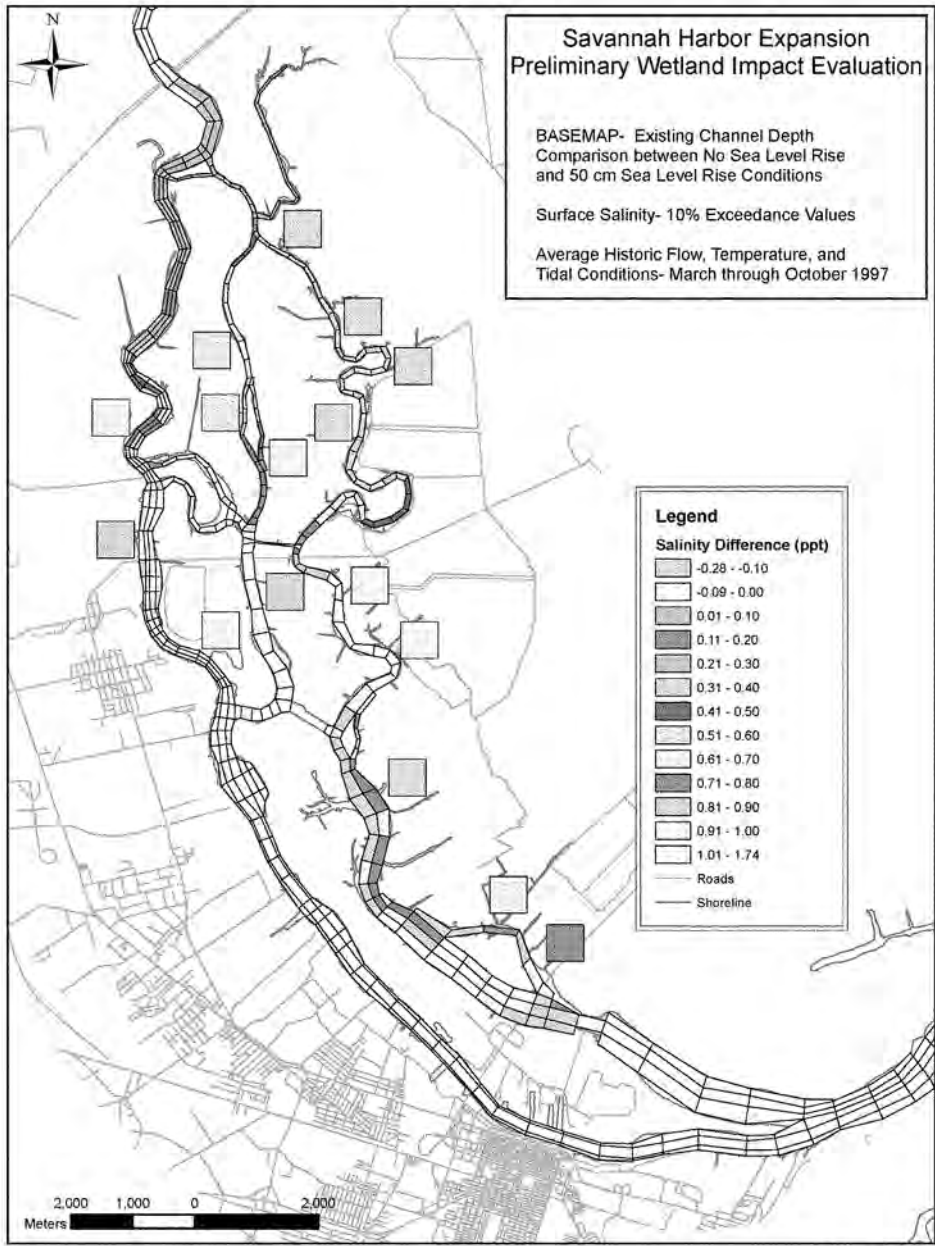
1997 (Average) Flow Conditions- 50cm Sea Level Rise

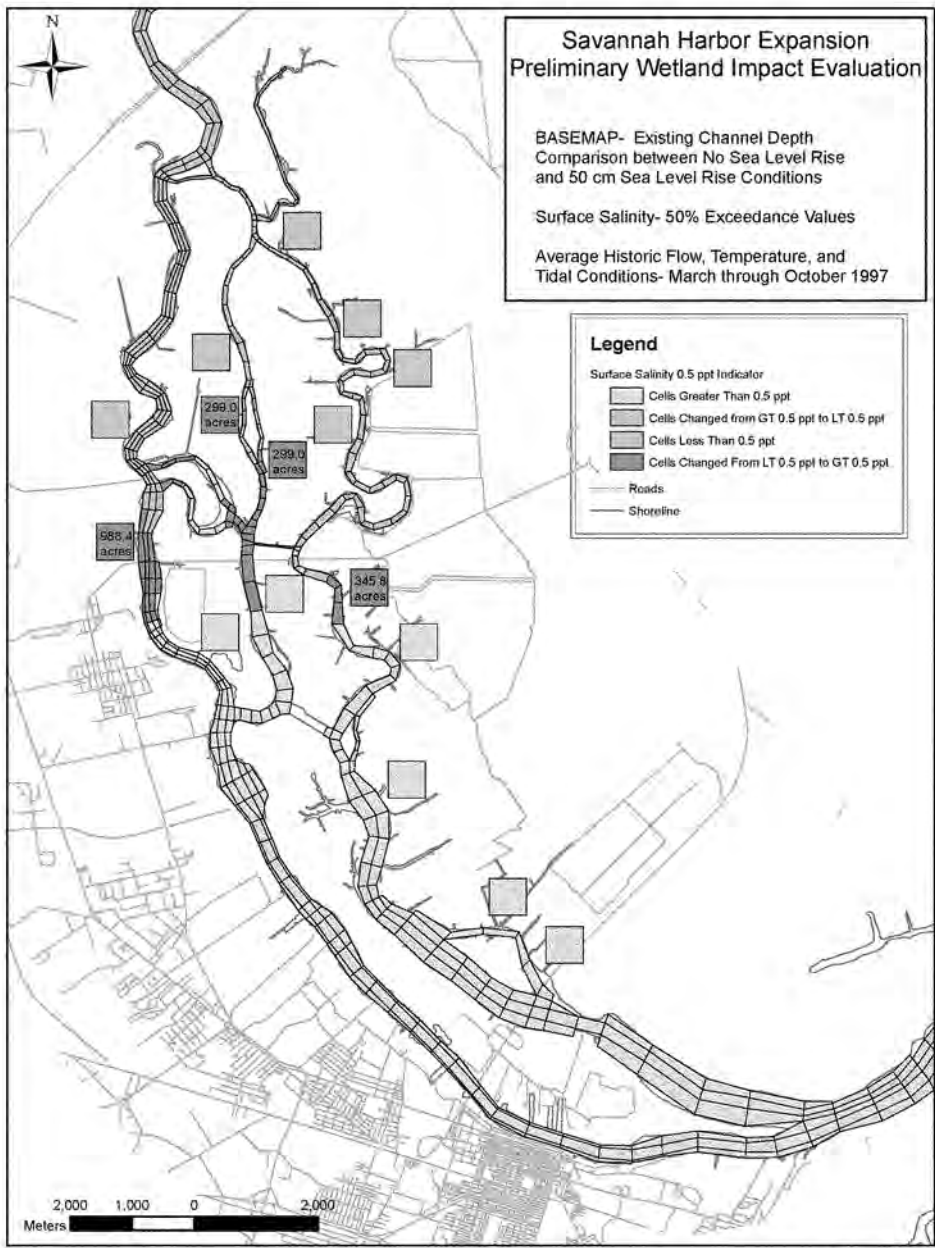


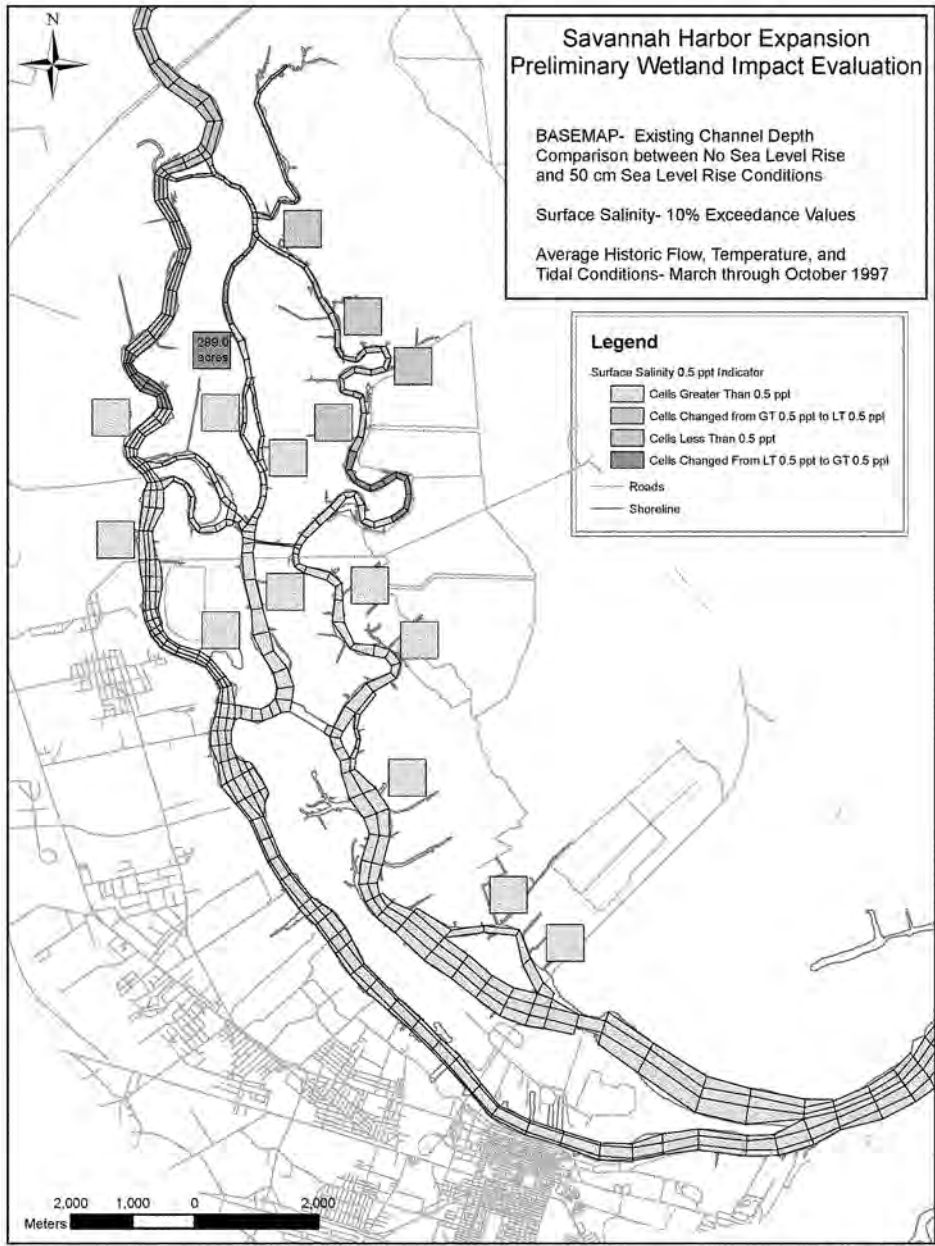


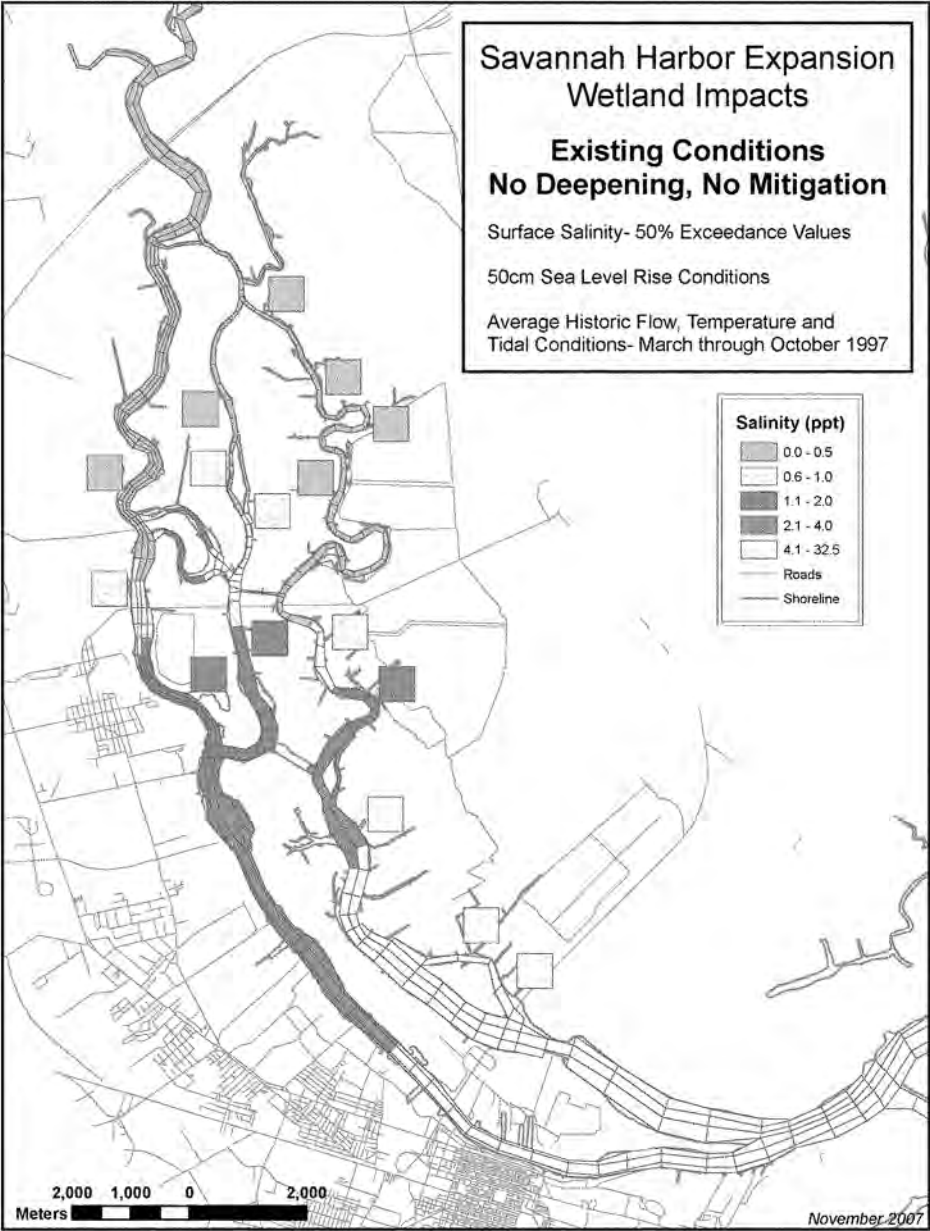


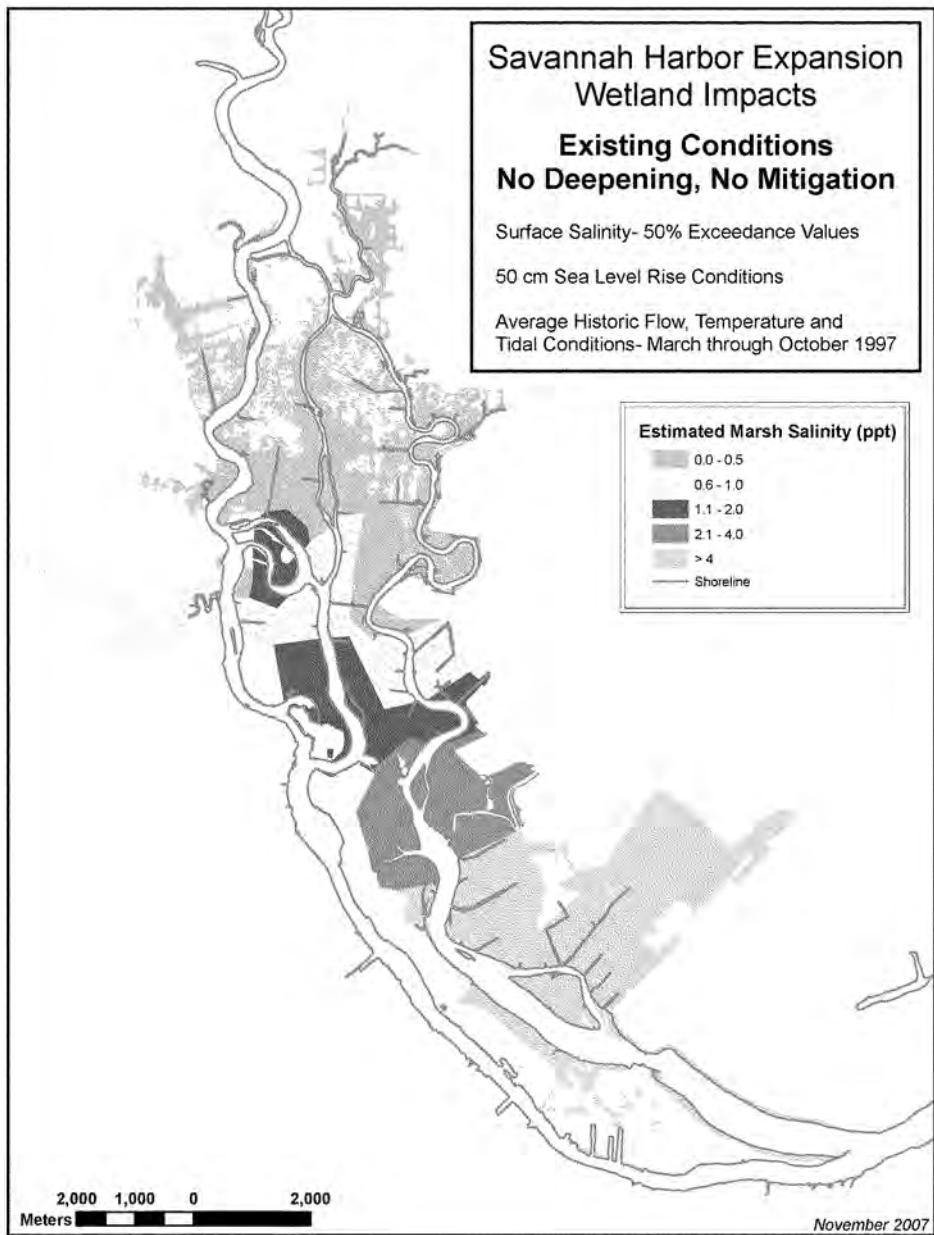












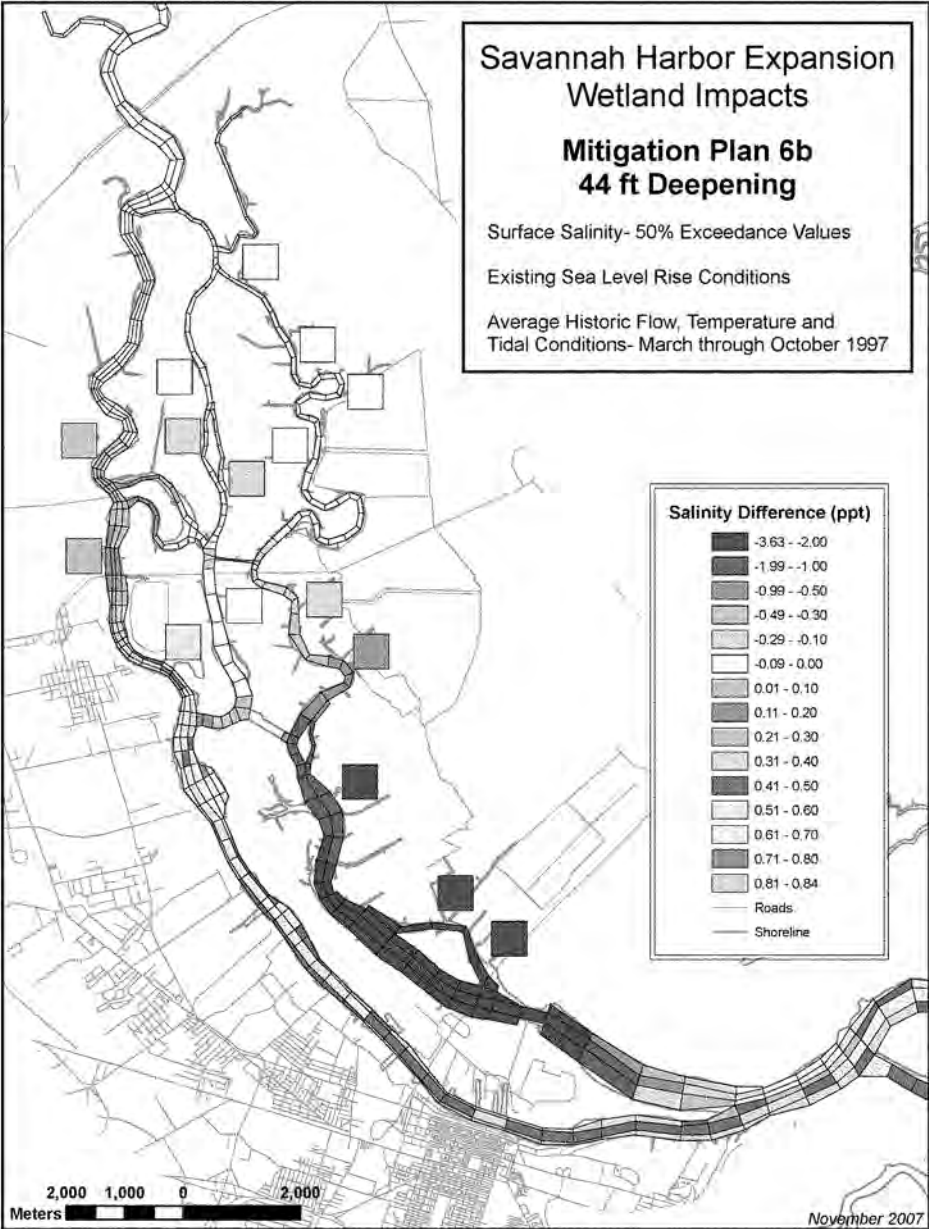
# **44 ft Channel Depth**

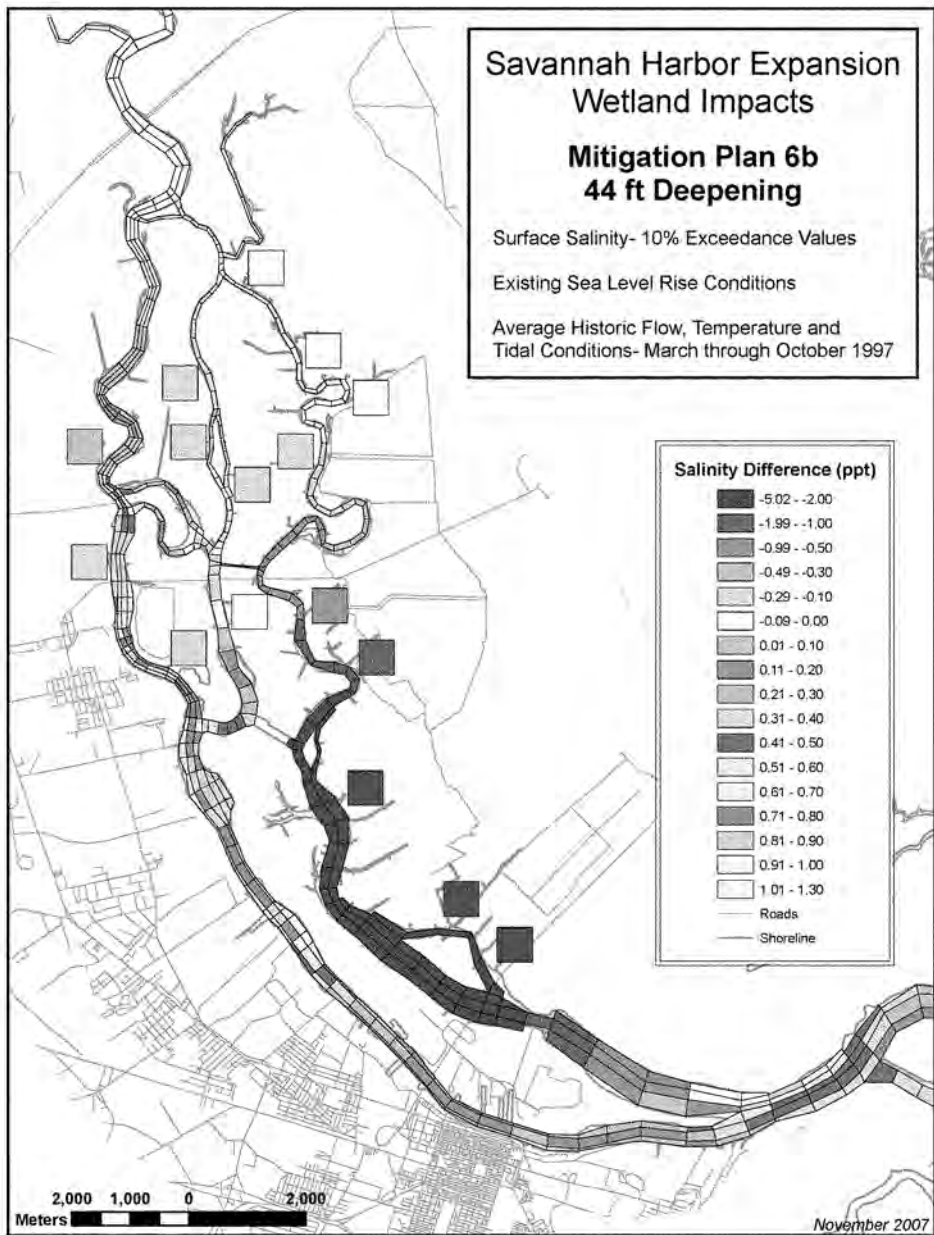
*Mitigation Plan 6b*

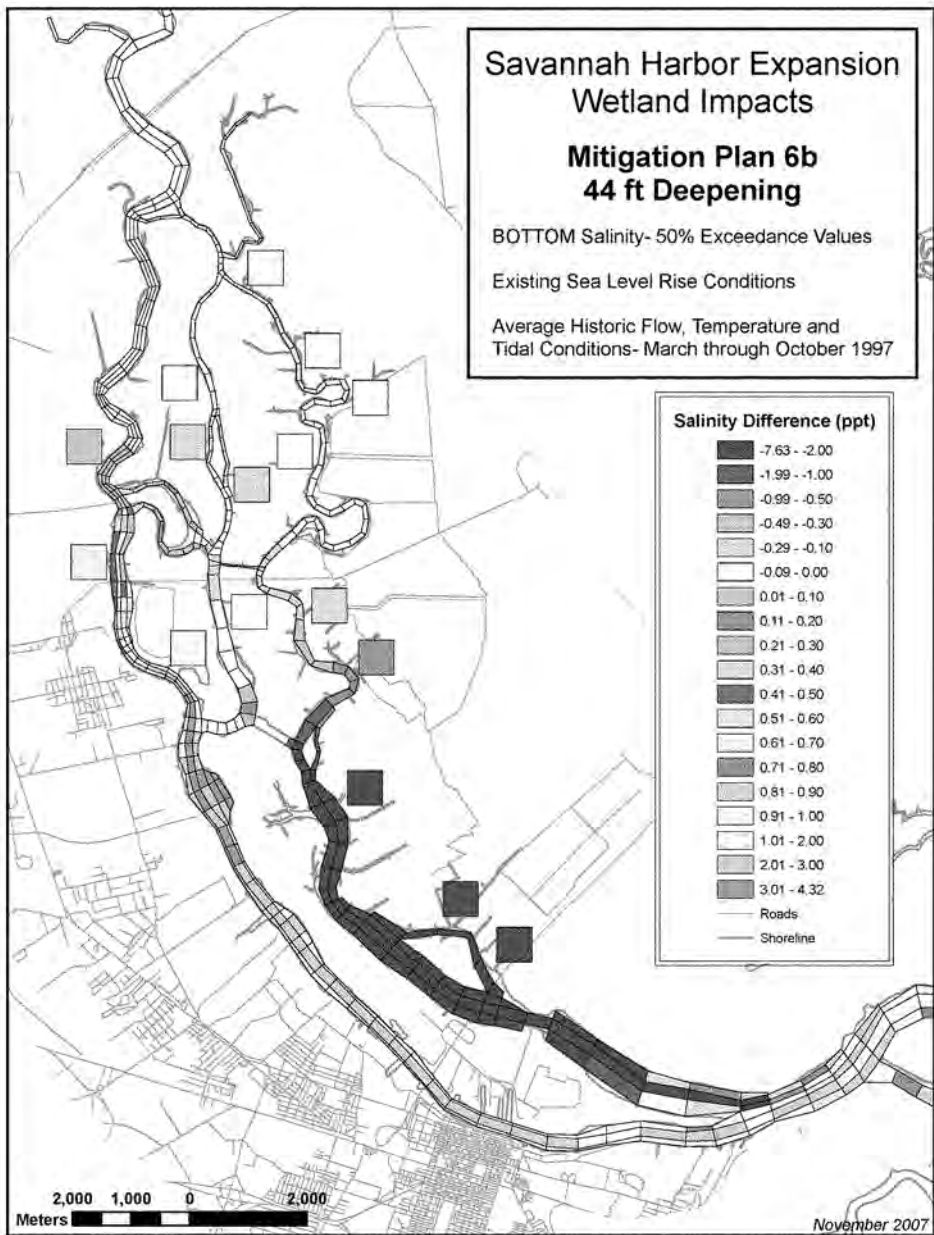
## *Basic Evaluation*

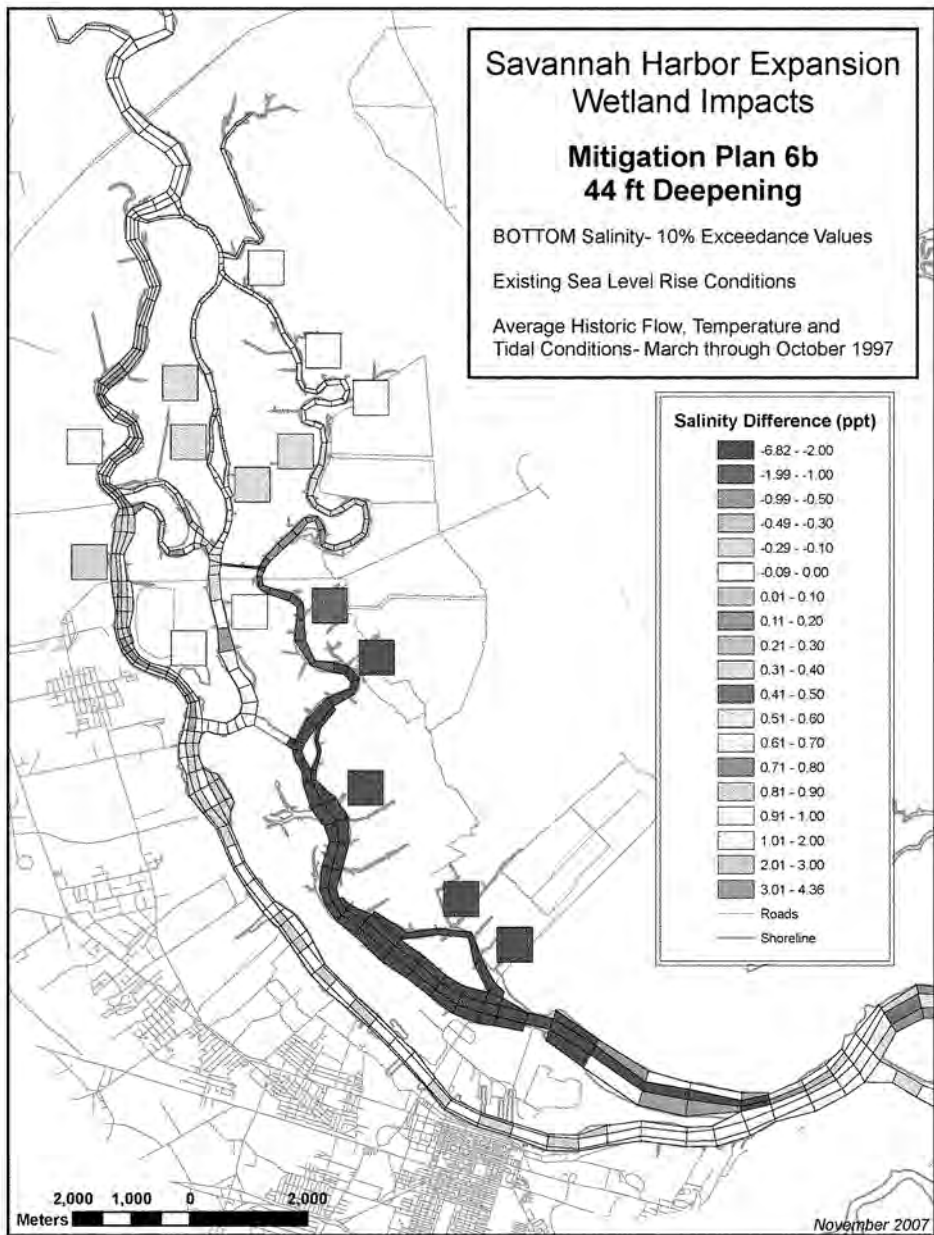
1997 (Average) Flow Conditions- No Sea Level Rise

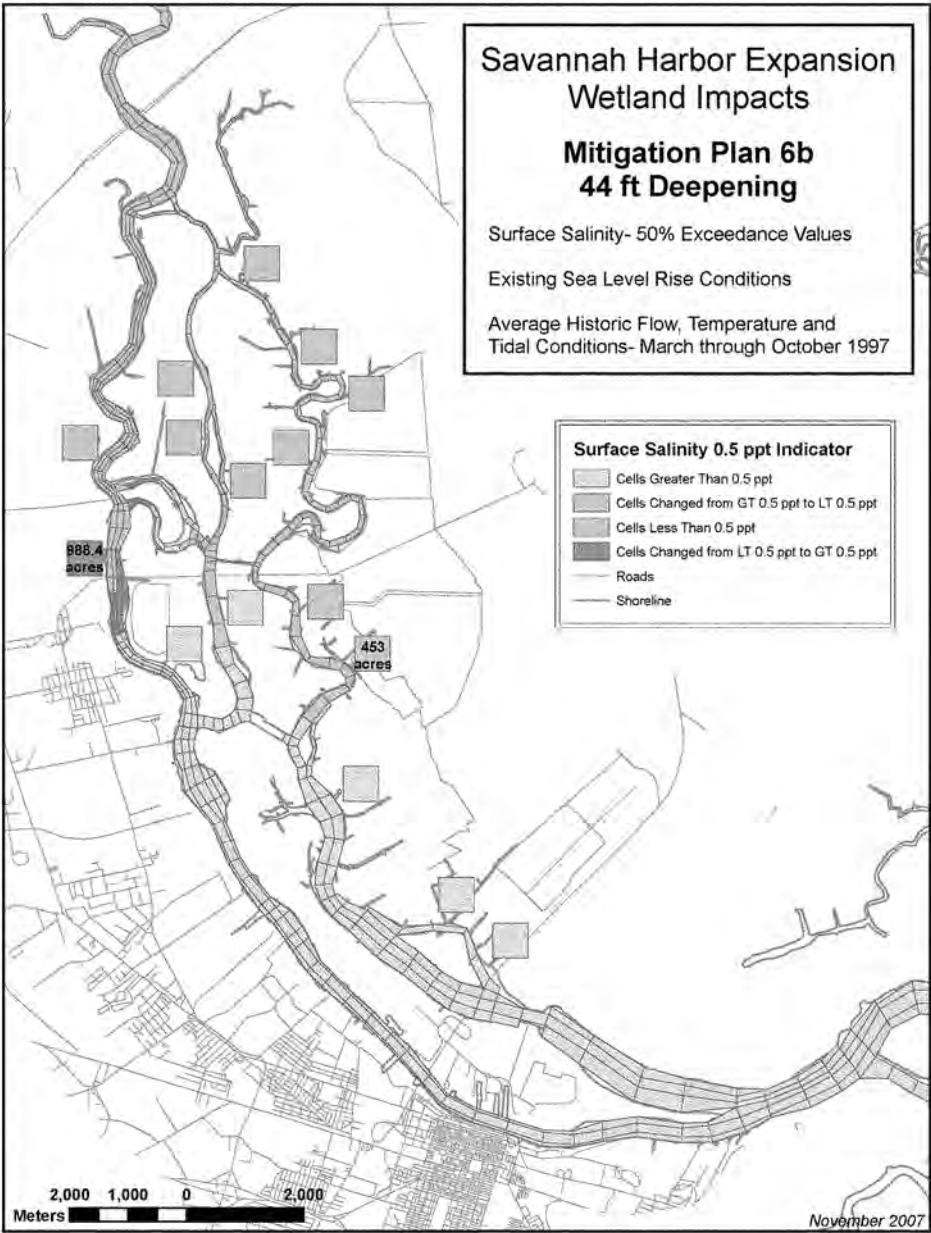


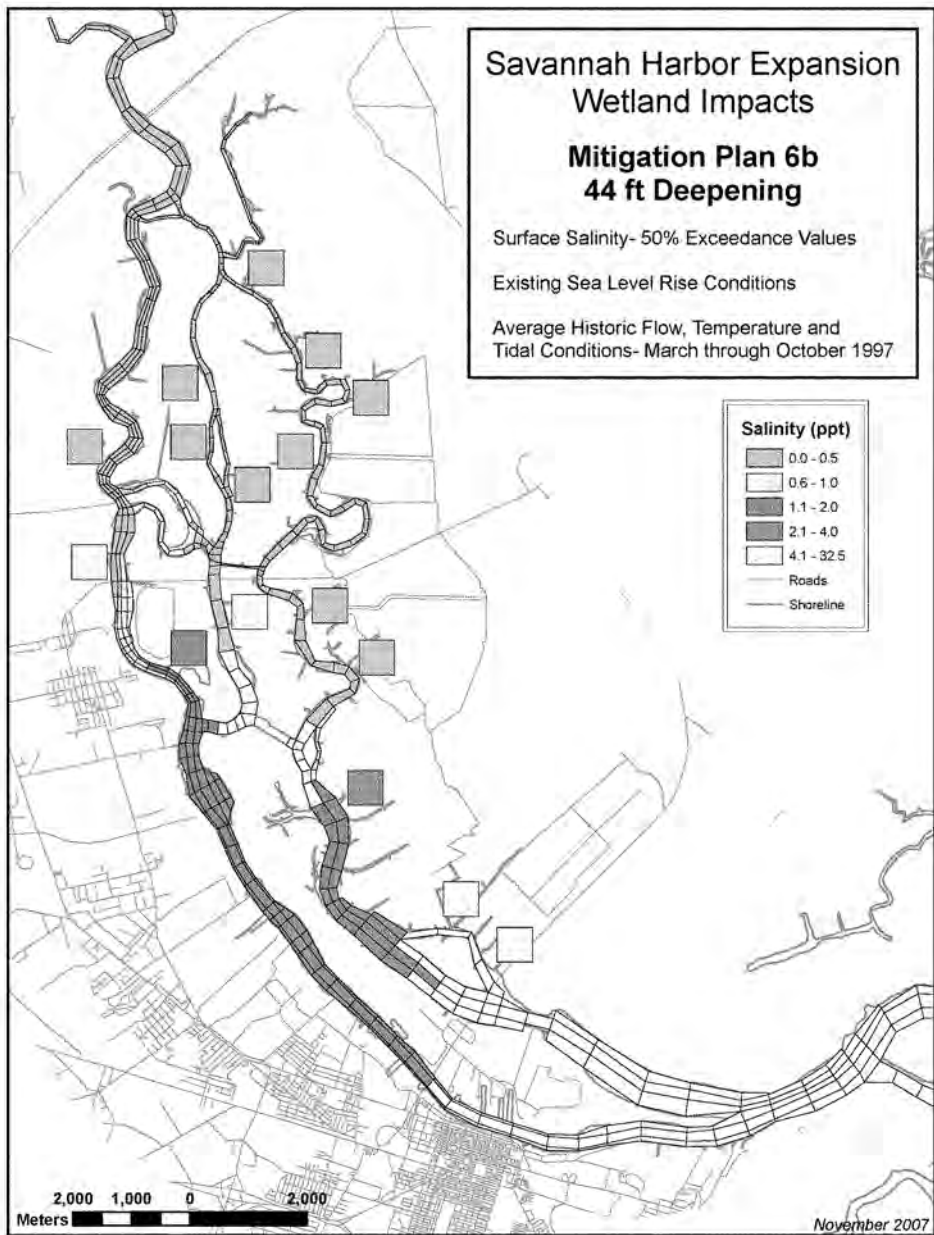


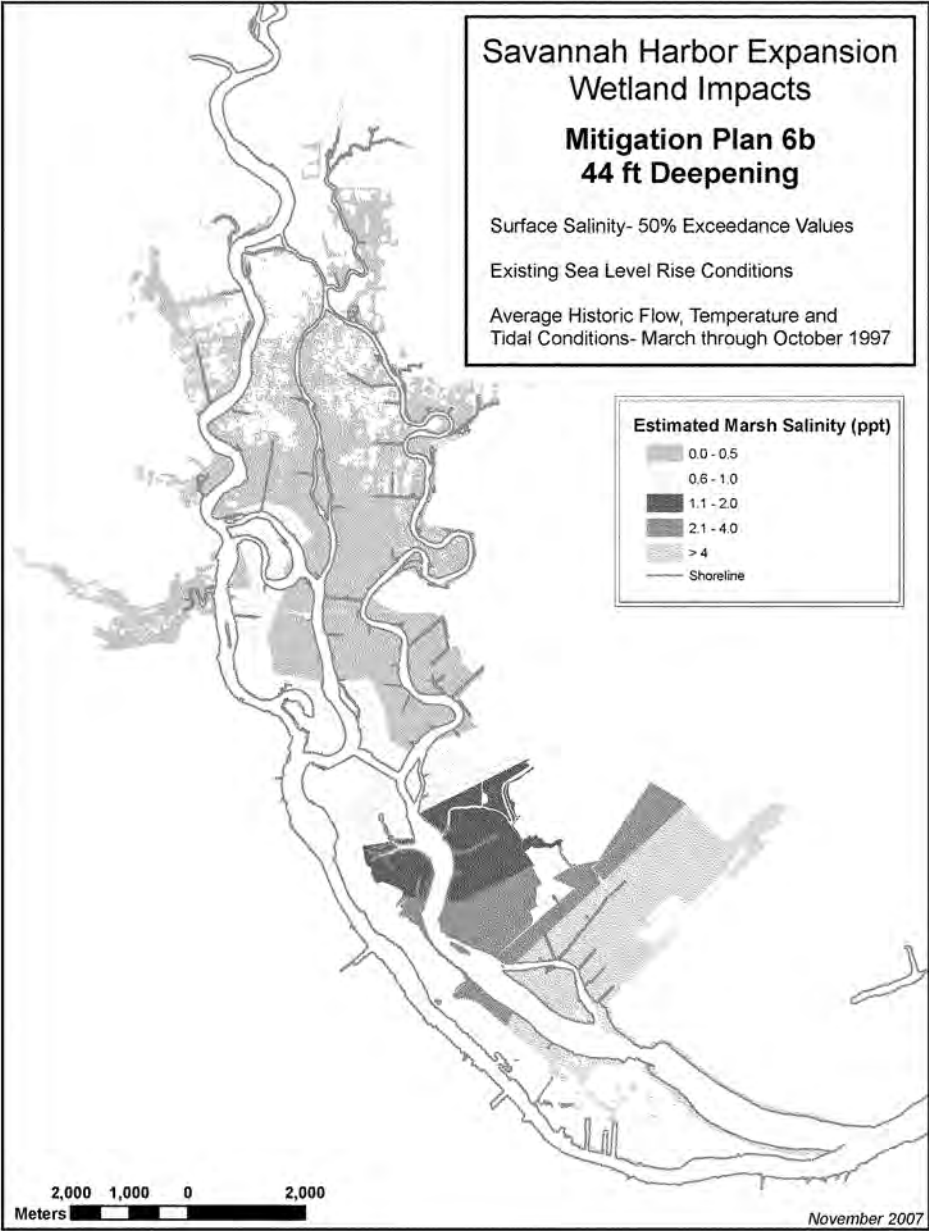








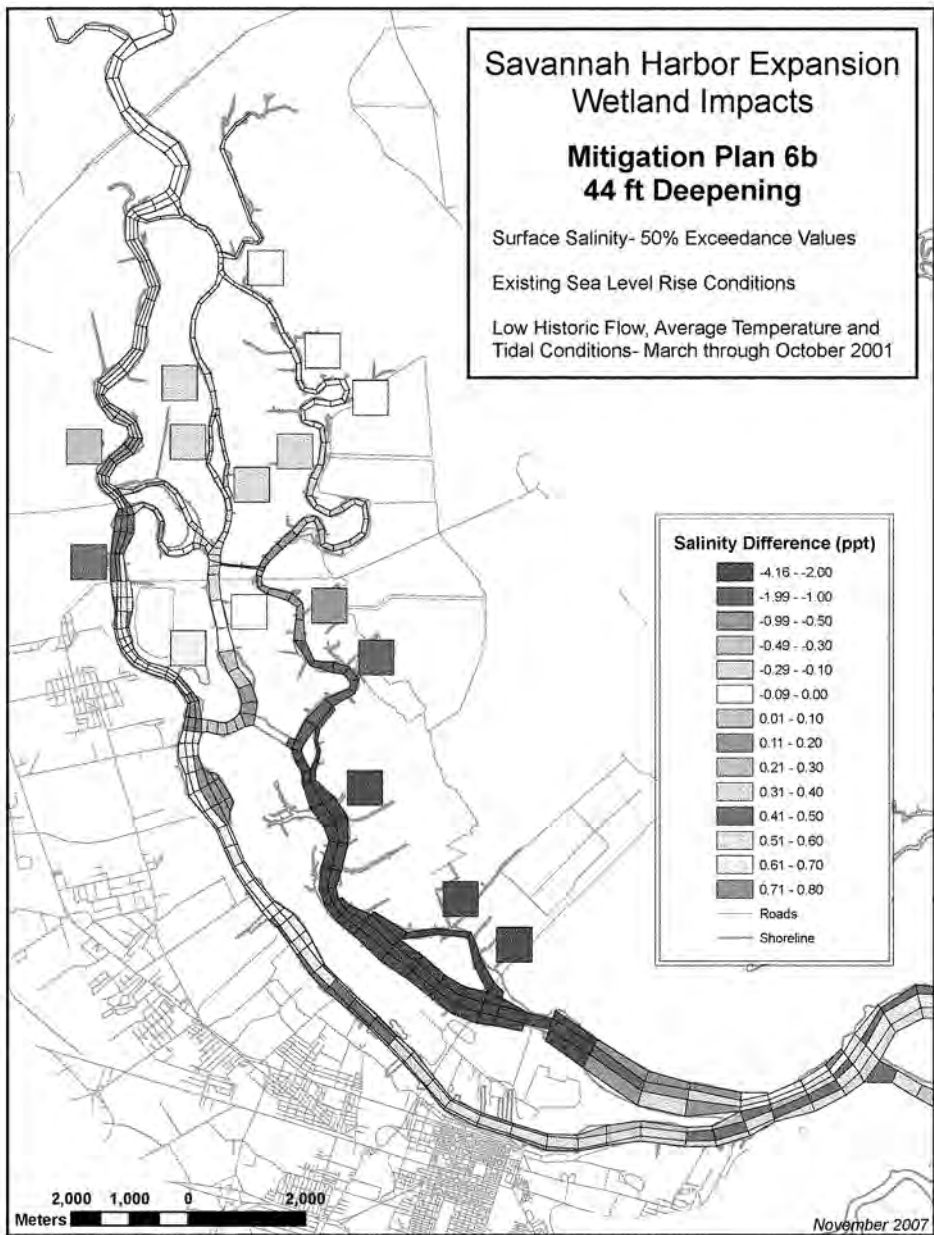


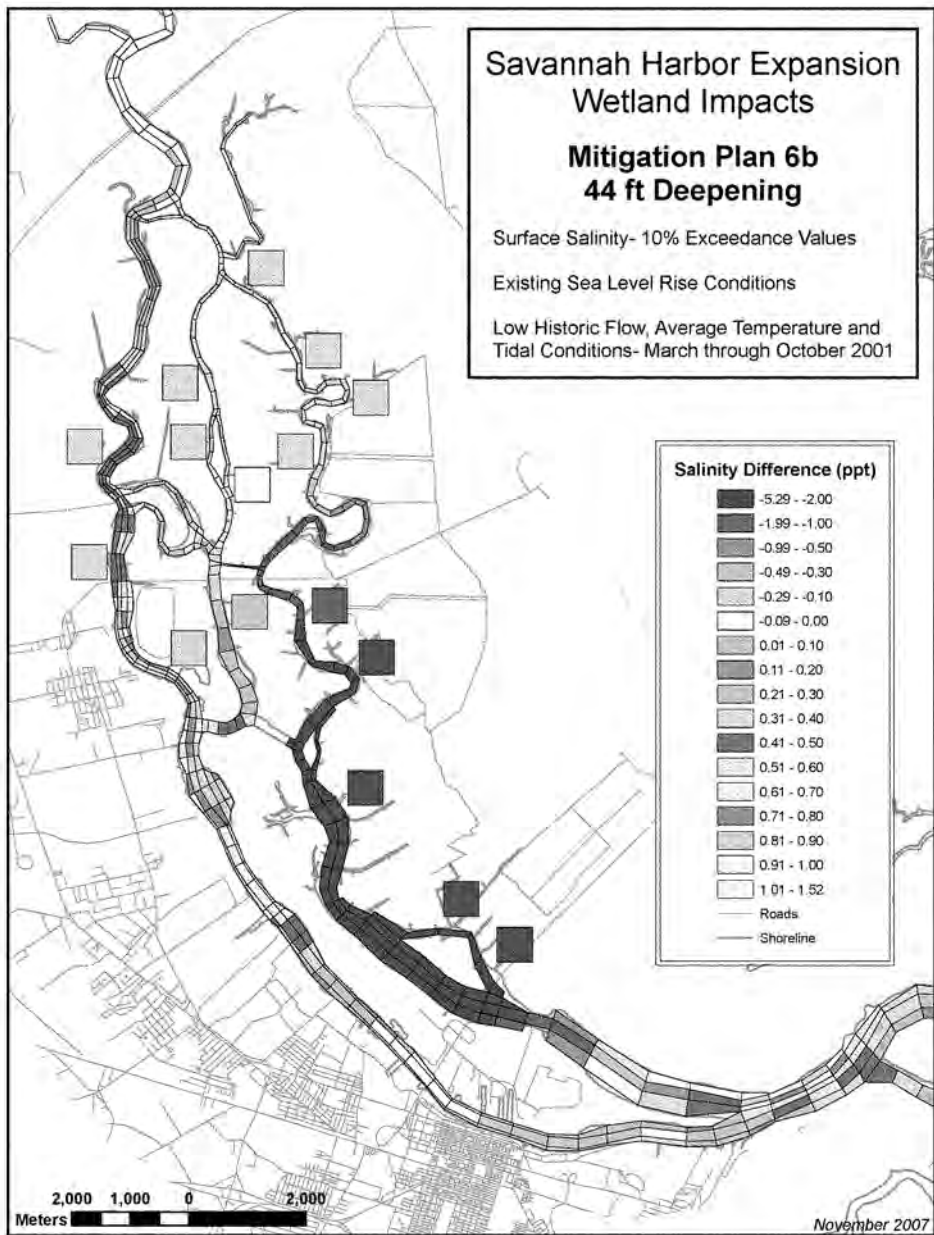


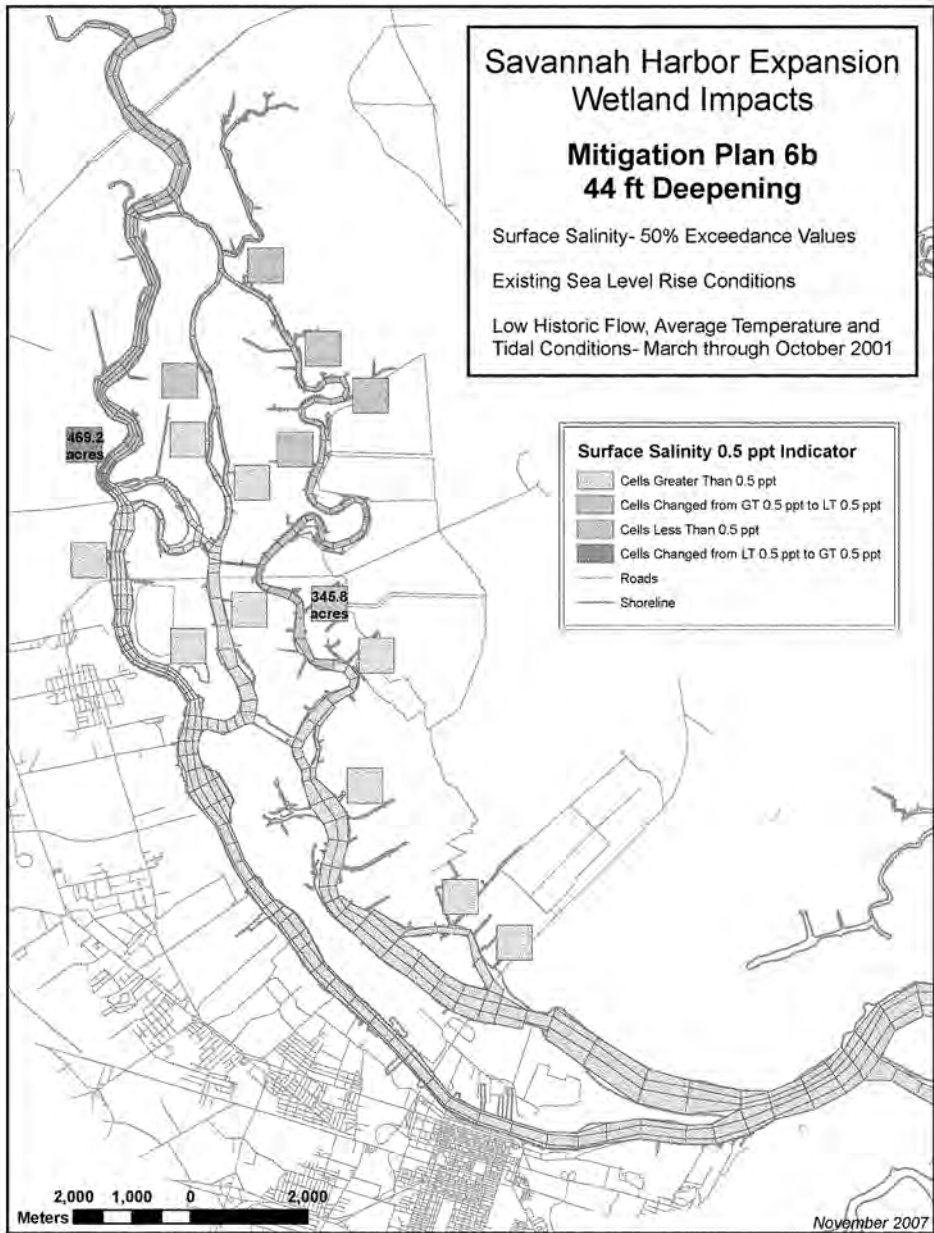
# *Sensitivity Analysis #1*

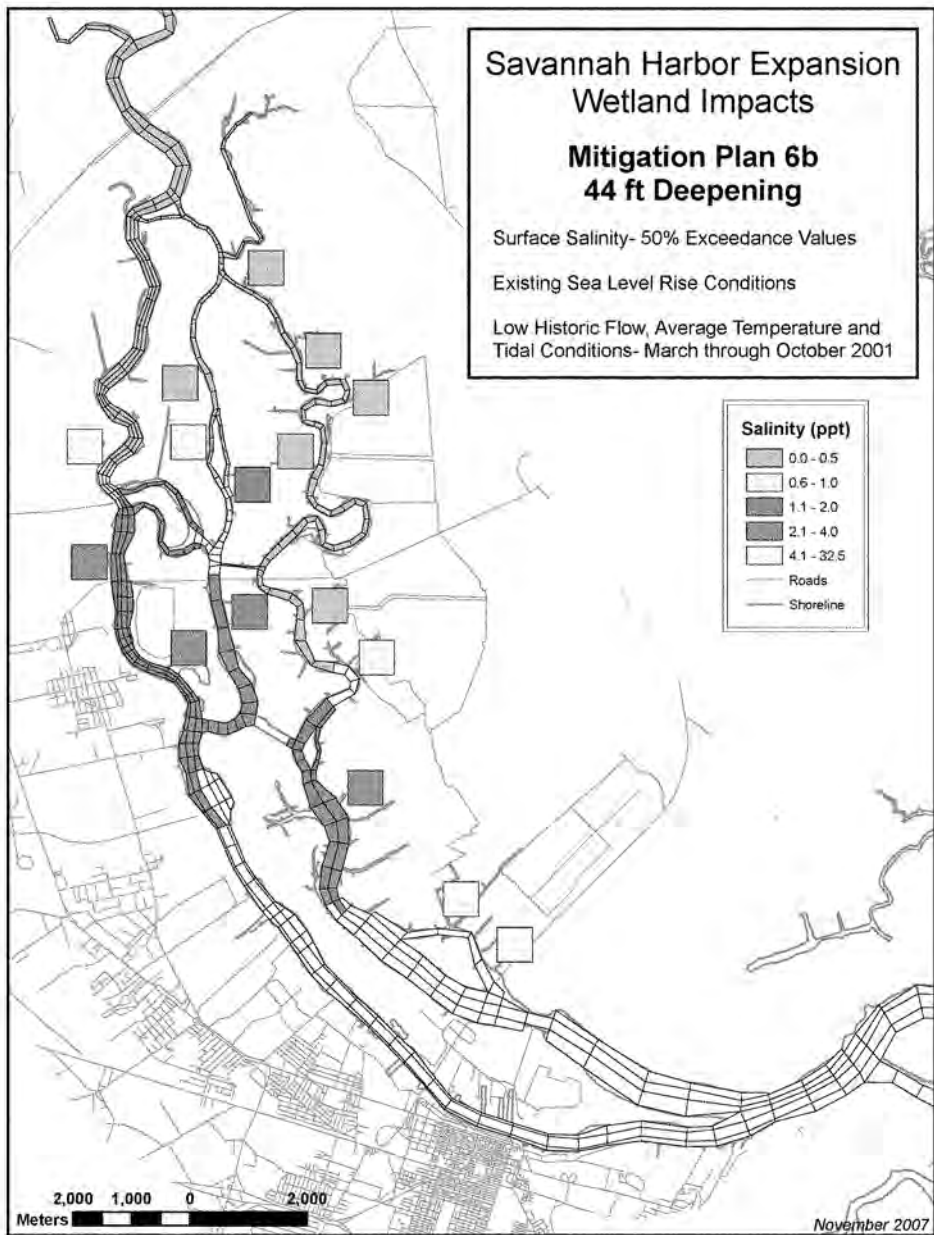
2001 (Low) Flow Conditions- No Sea Level Rise

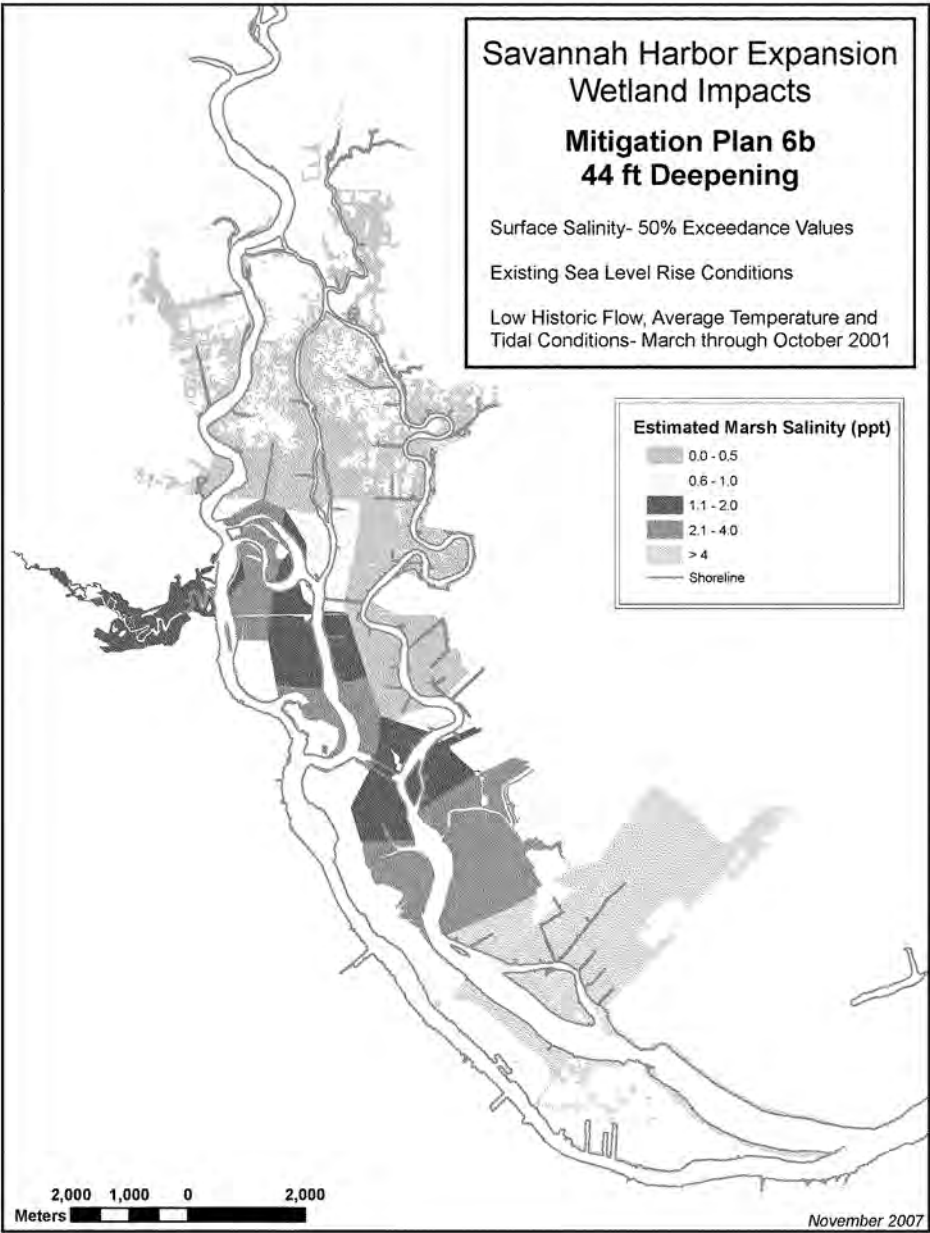






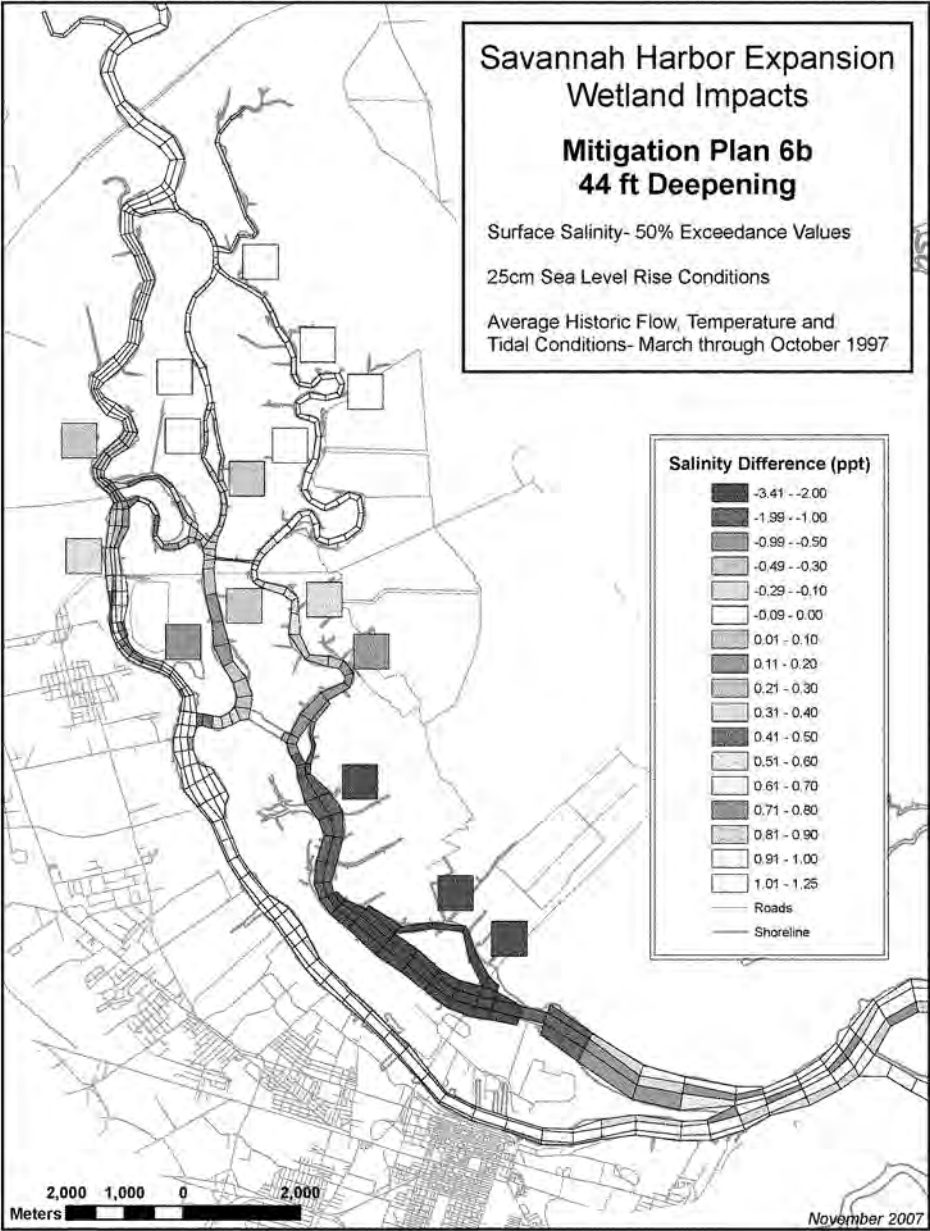


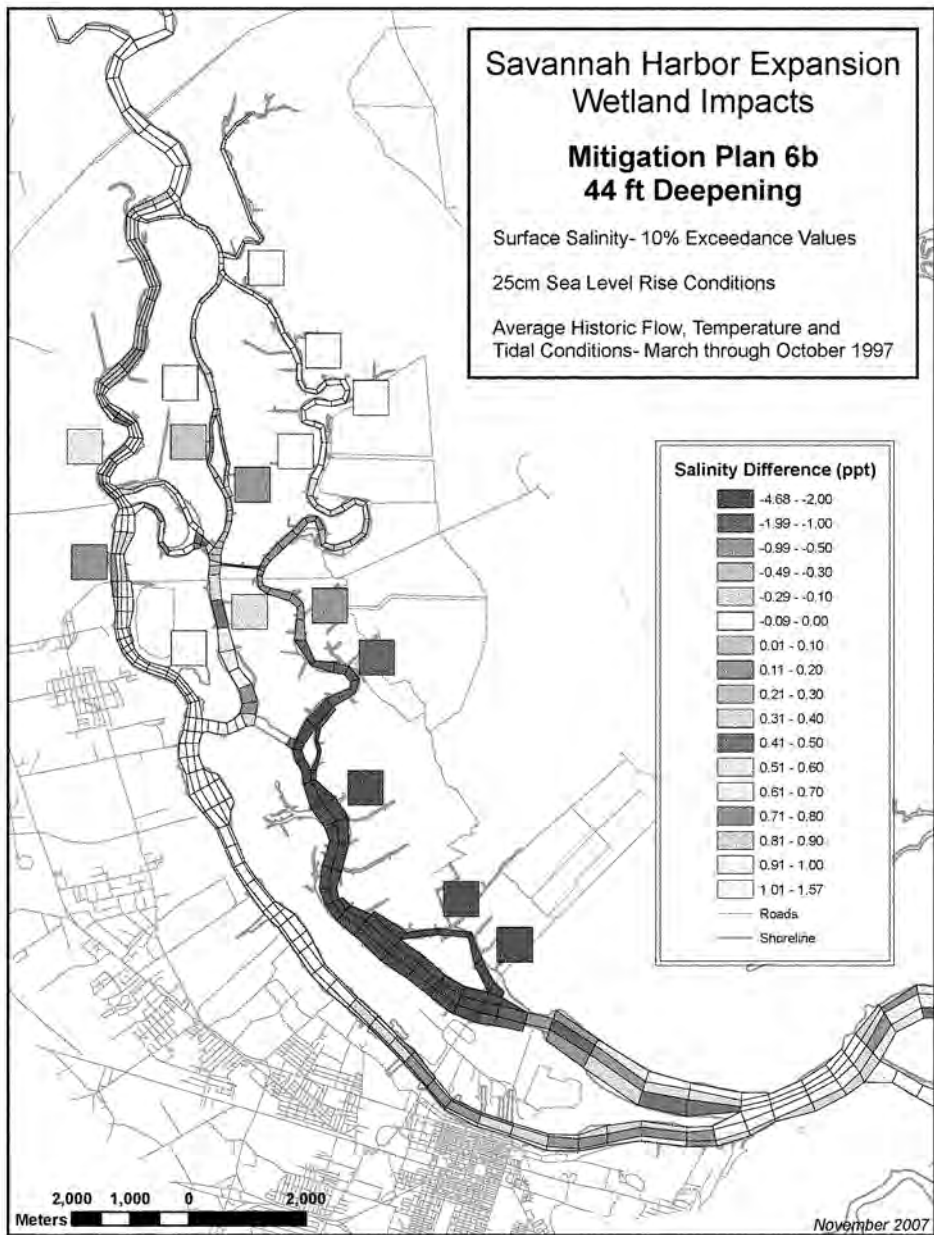




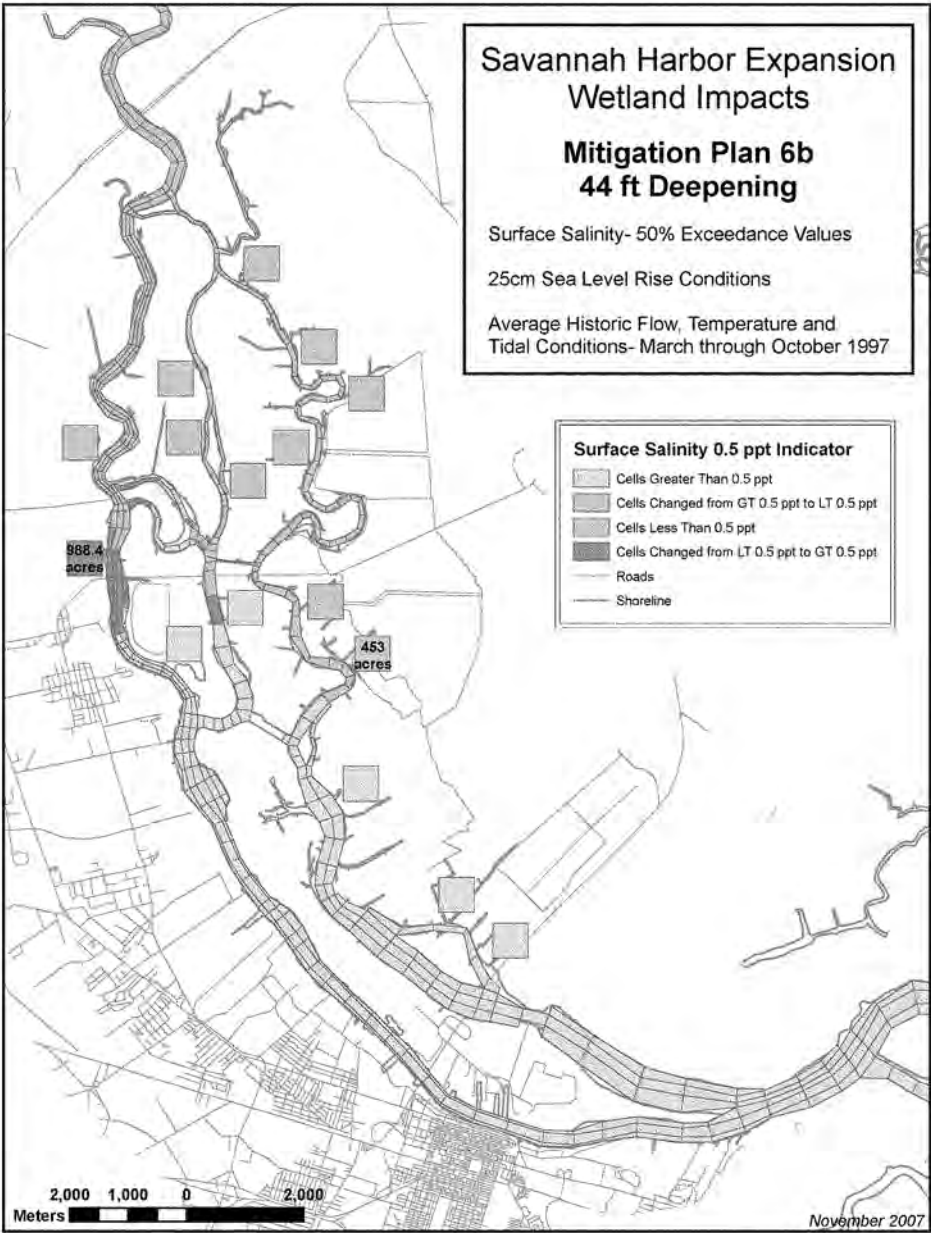
## *Sensitivity Analysis #2A*

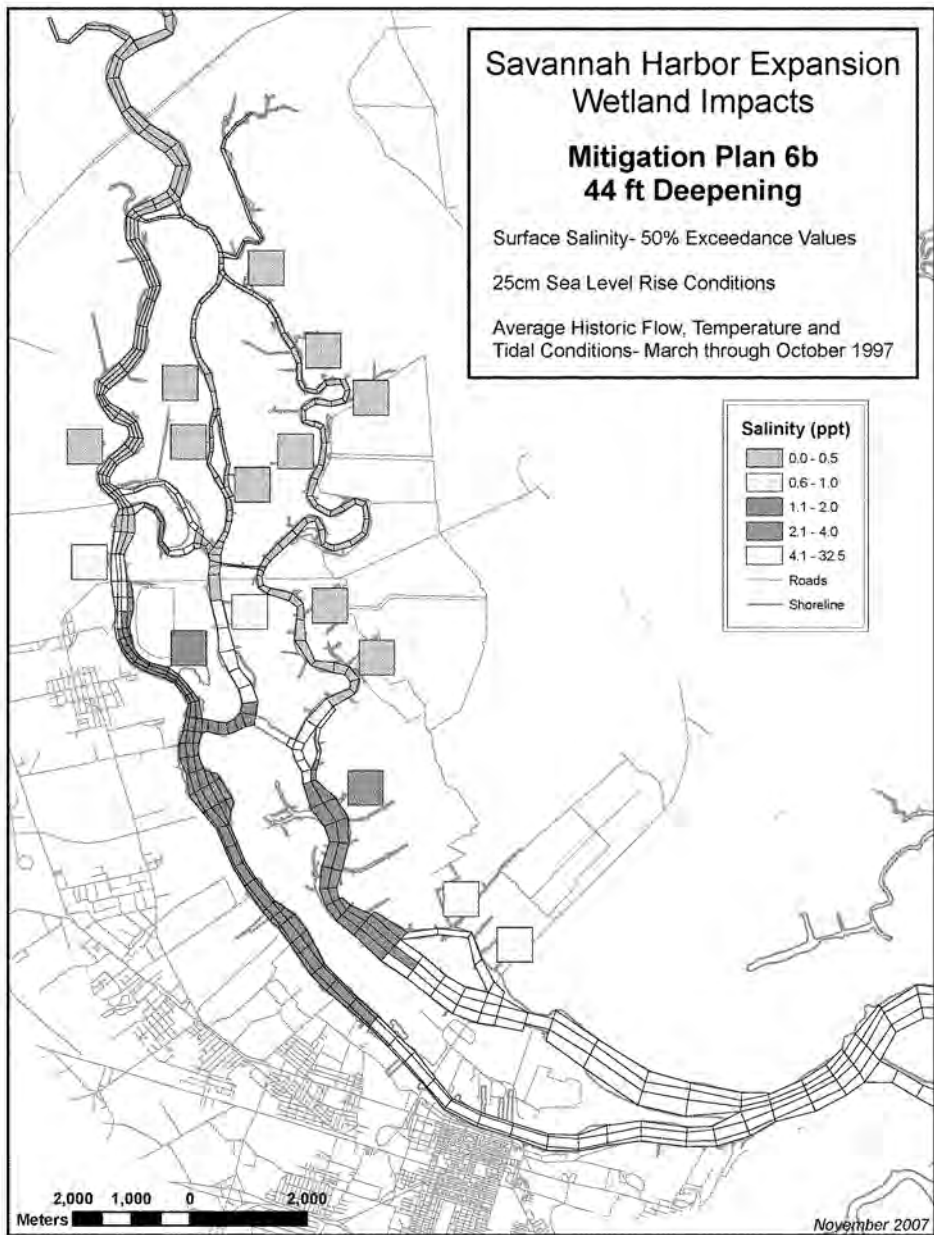
1997 (Average) Flow Conditions- 25cm Sea Level Rise

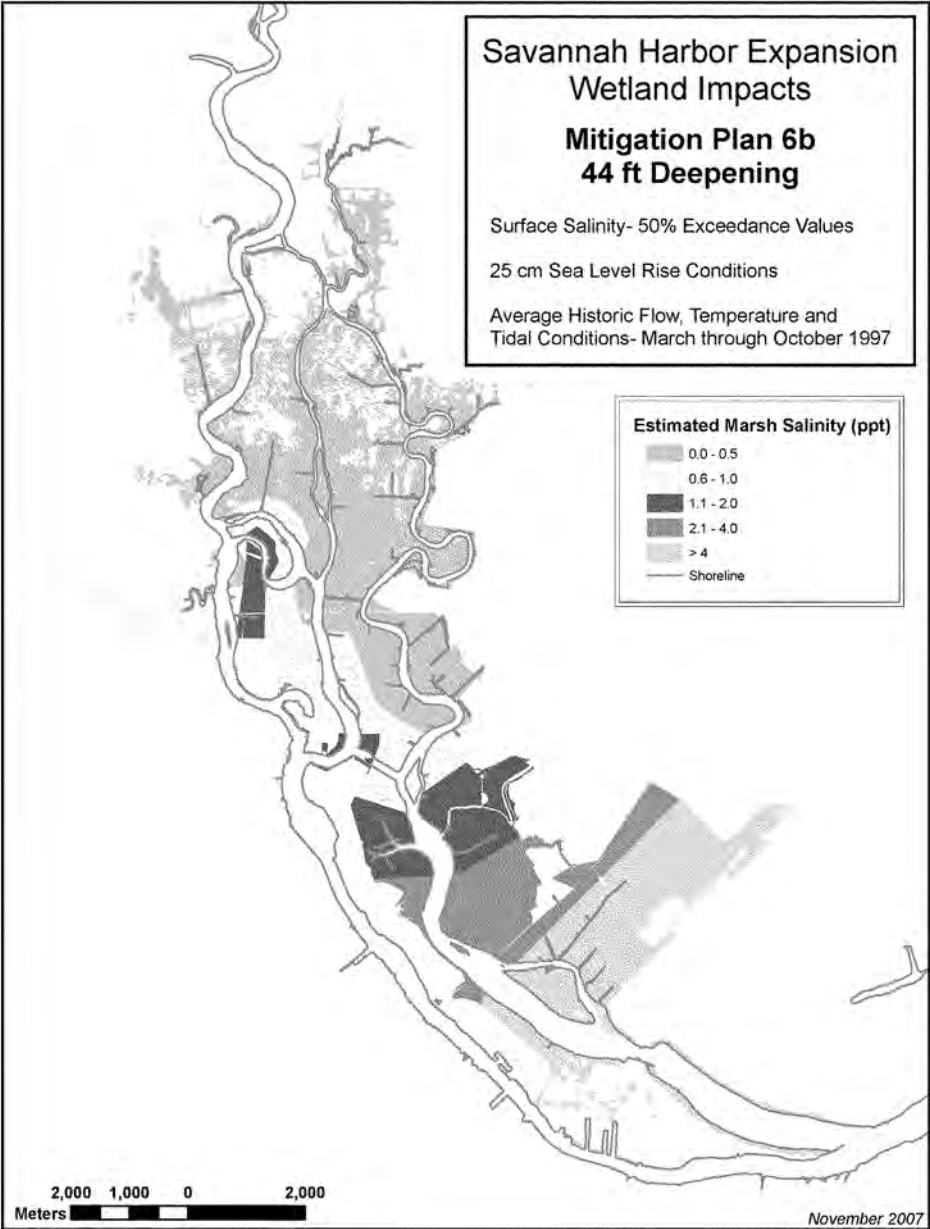






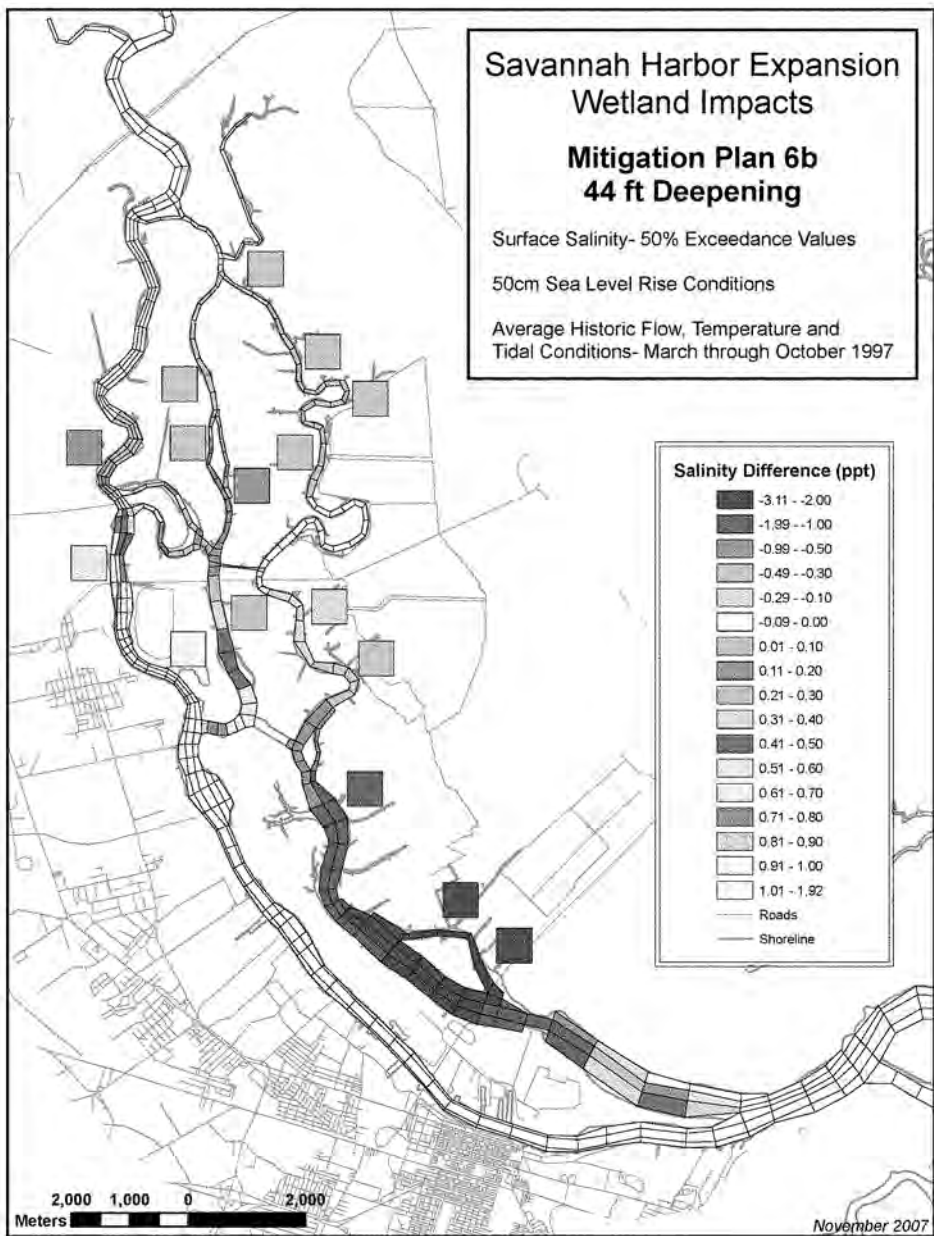


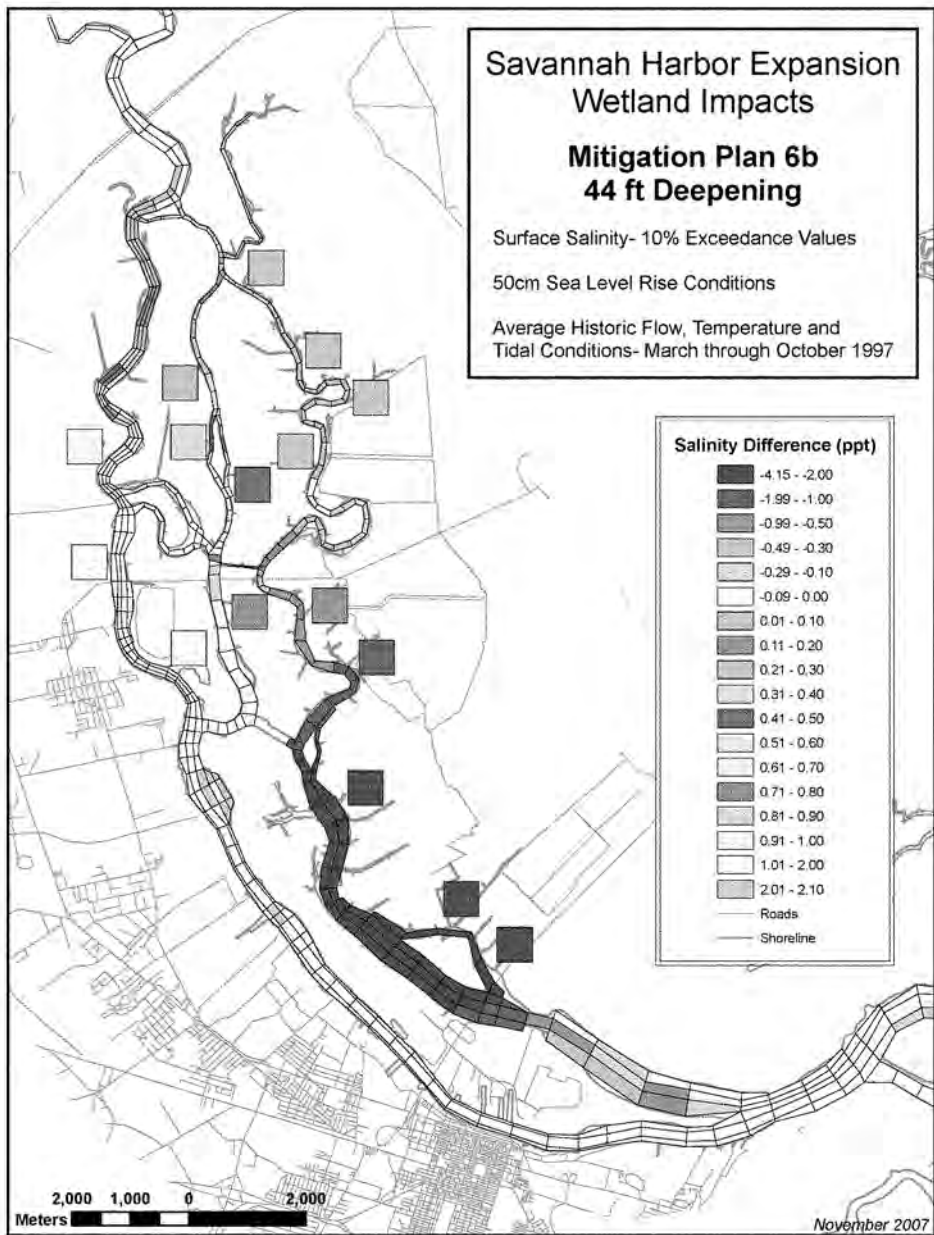


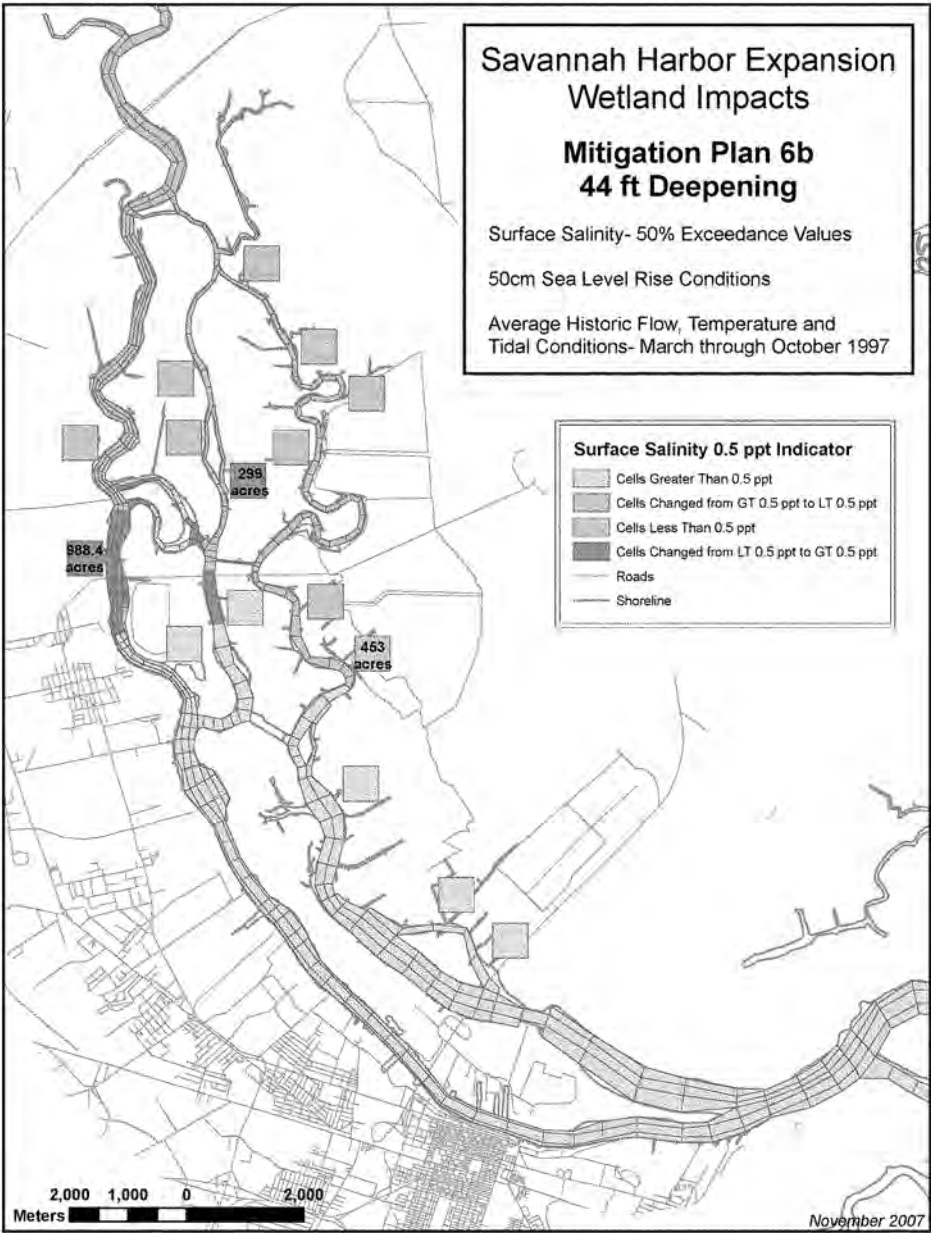


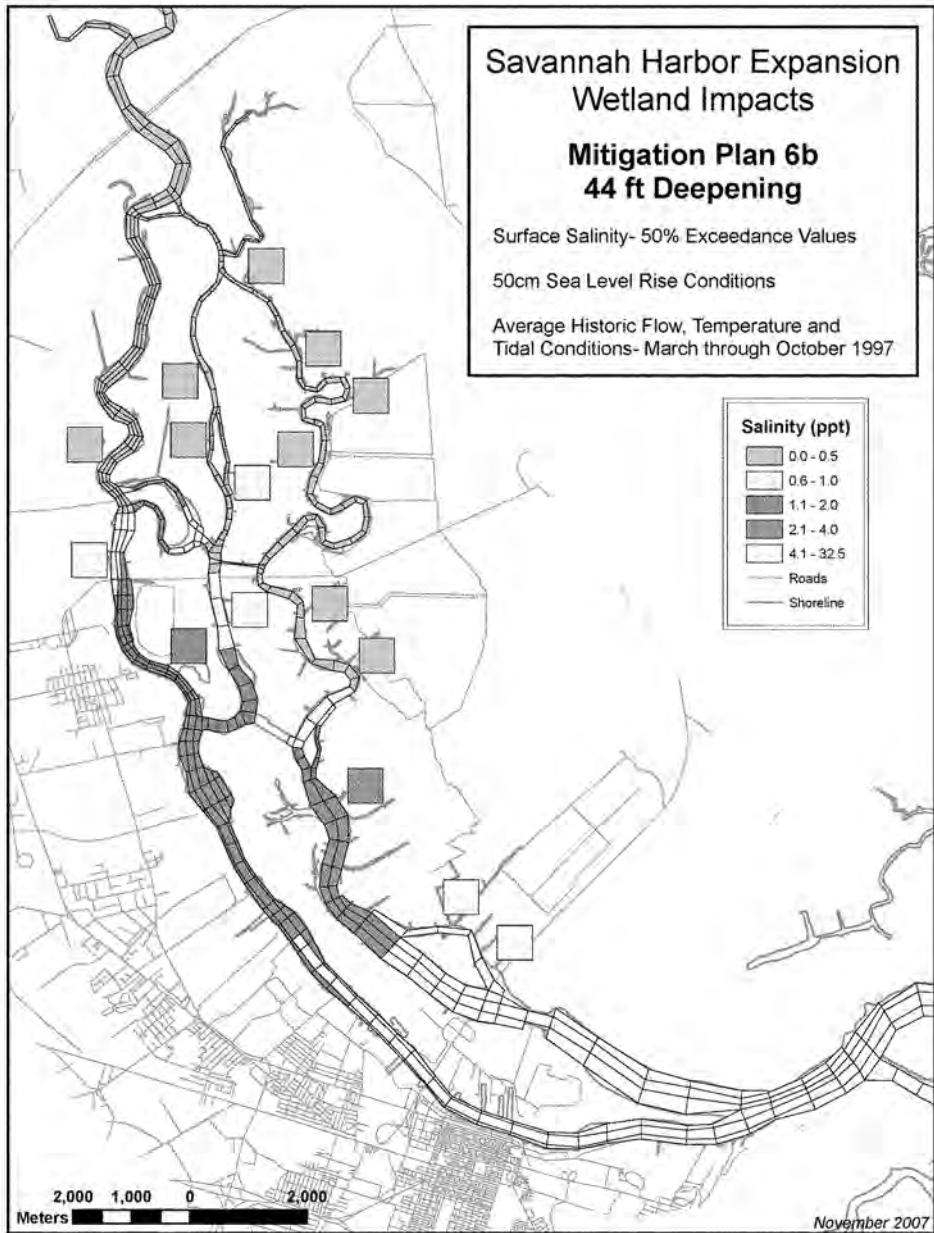
## *Sensitivity Analysis #2B*

1997 (Average) Flow Conditions- 50cm Sea Level Rise

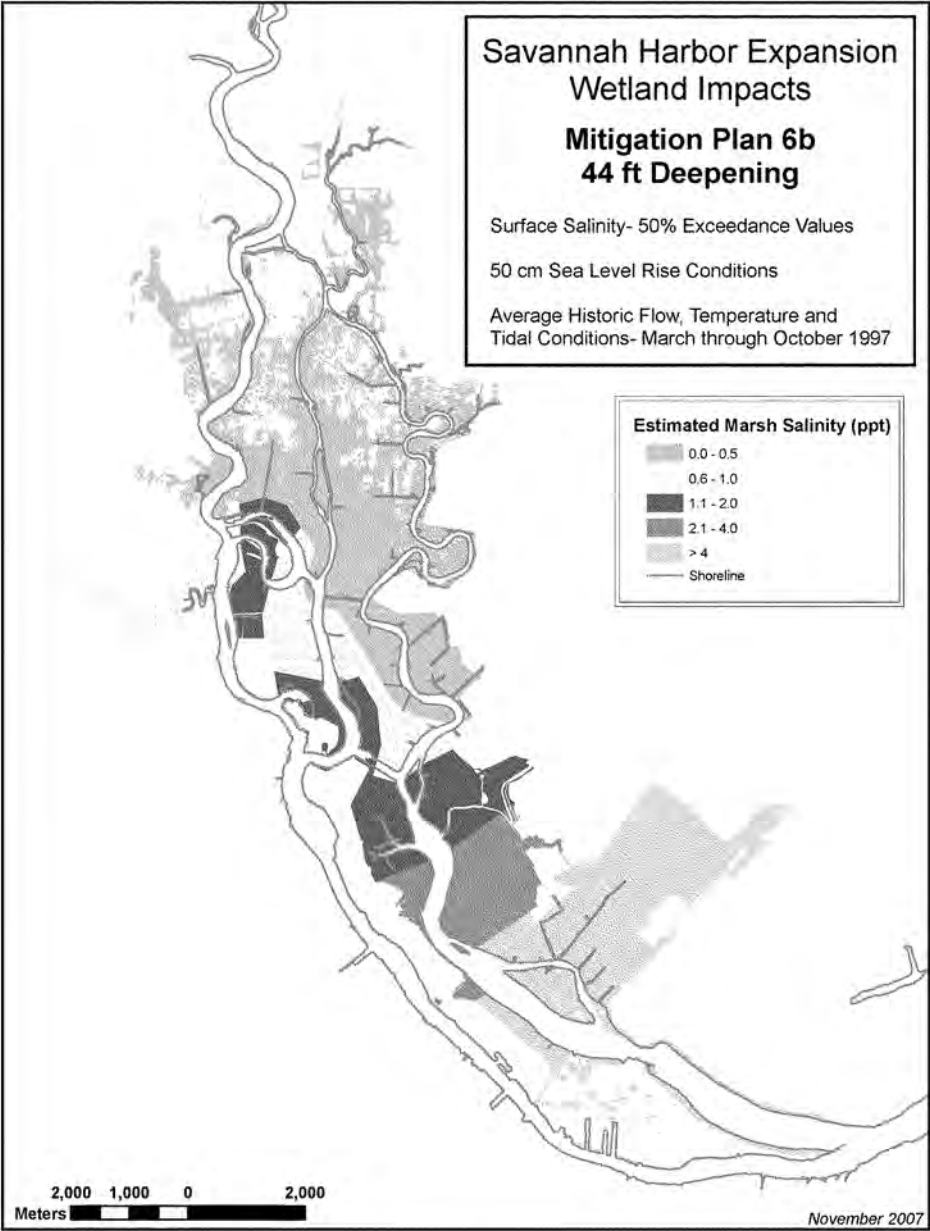










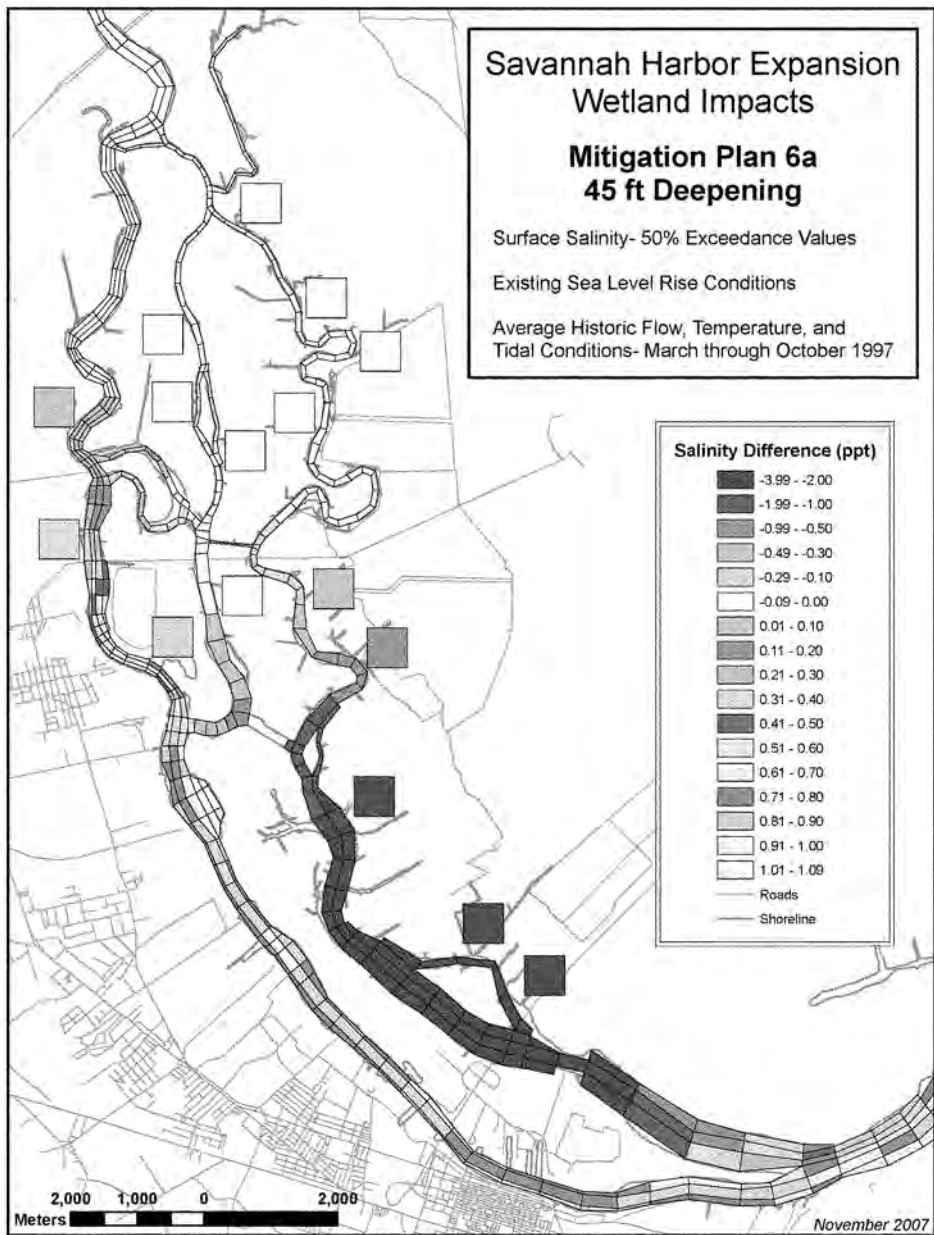


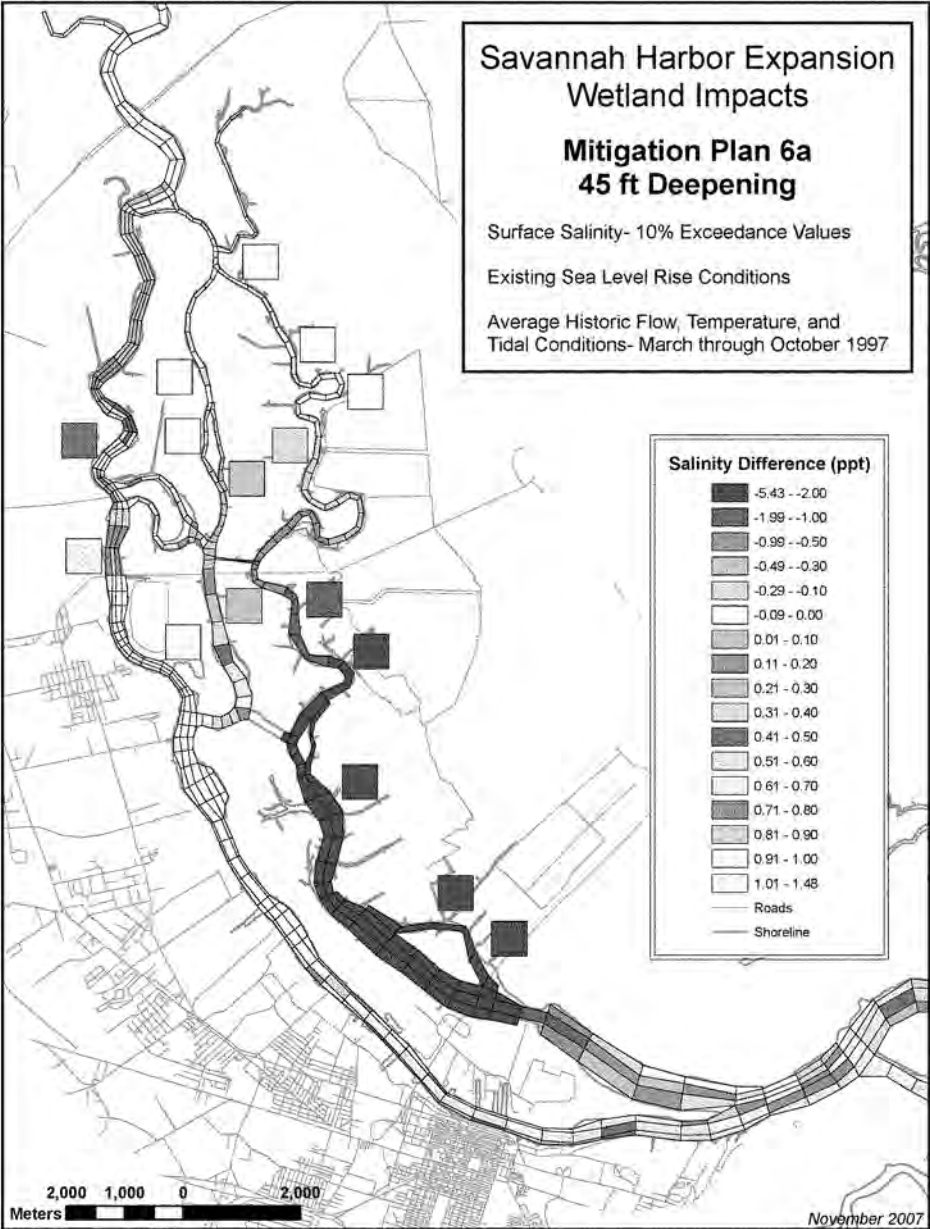
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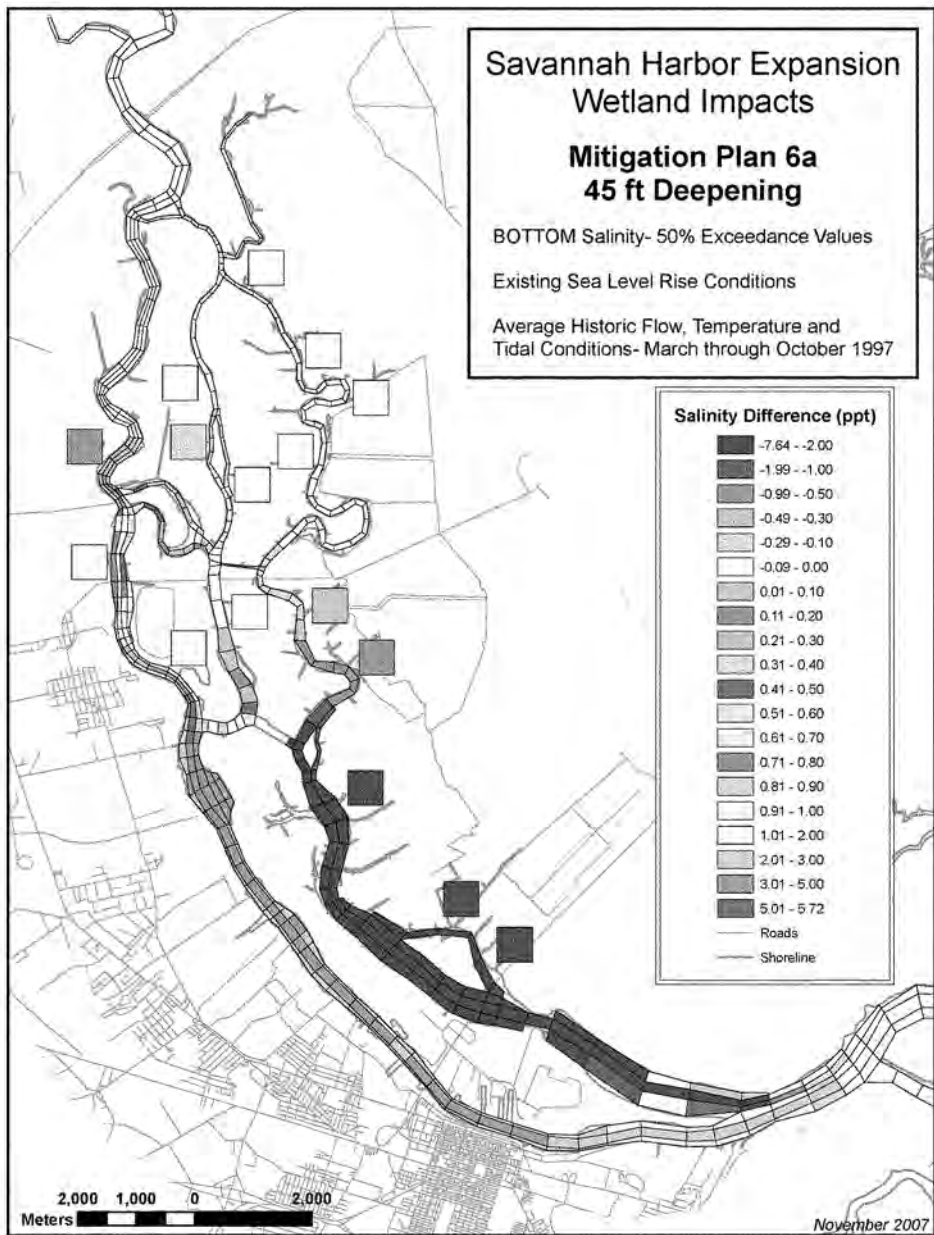
## *Mitigation Plan 6a*

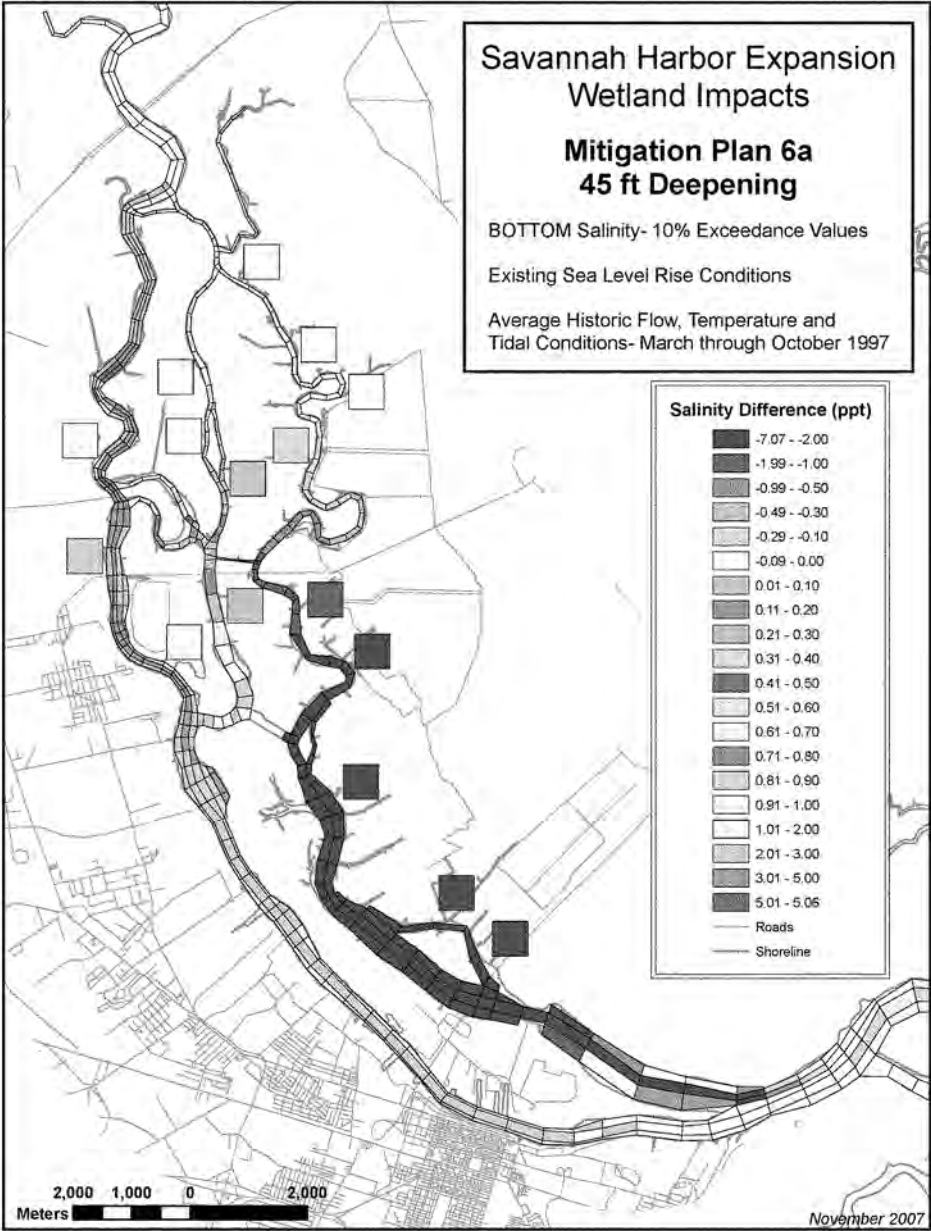
## *Basic Evaluation*

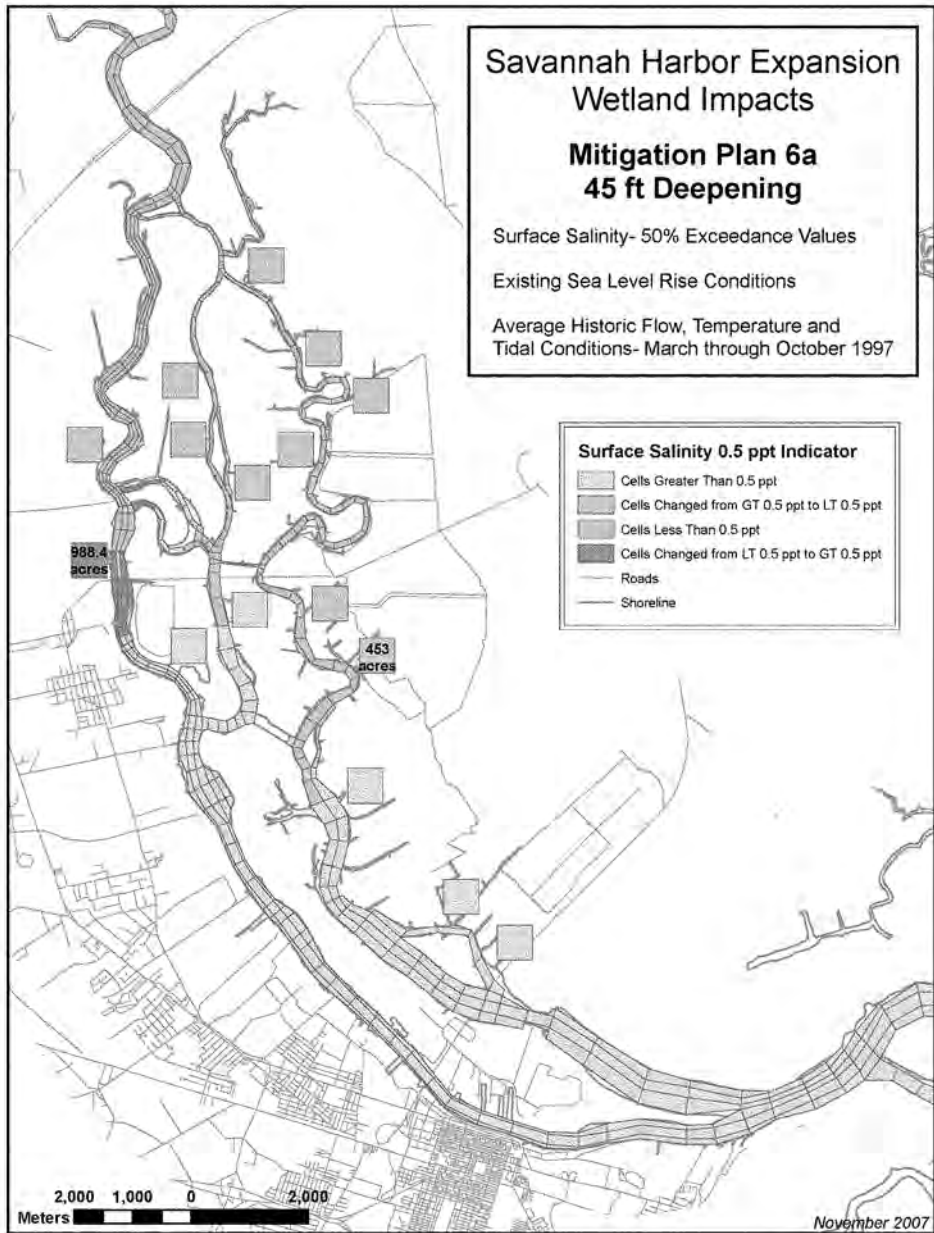
1997 (Average) Flow Conditions- No Sea Level Rise



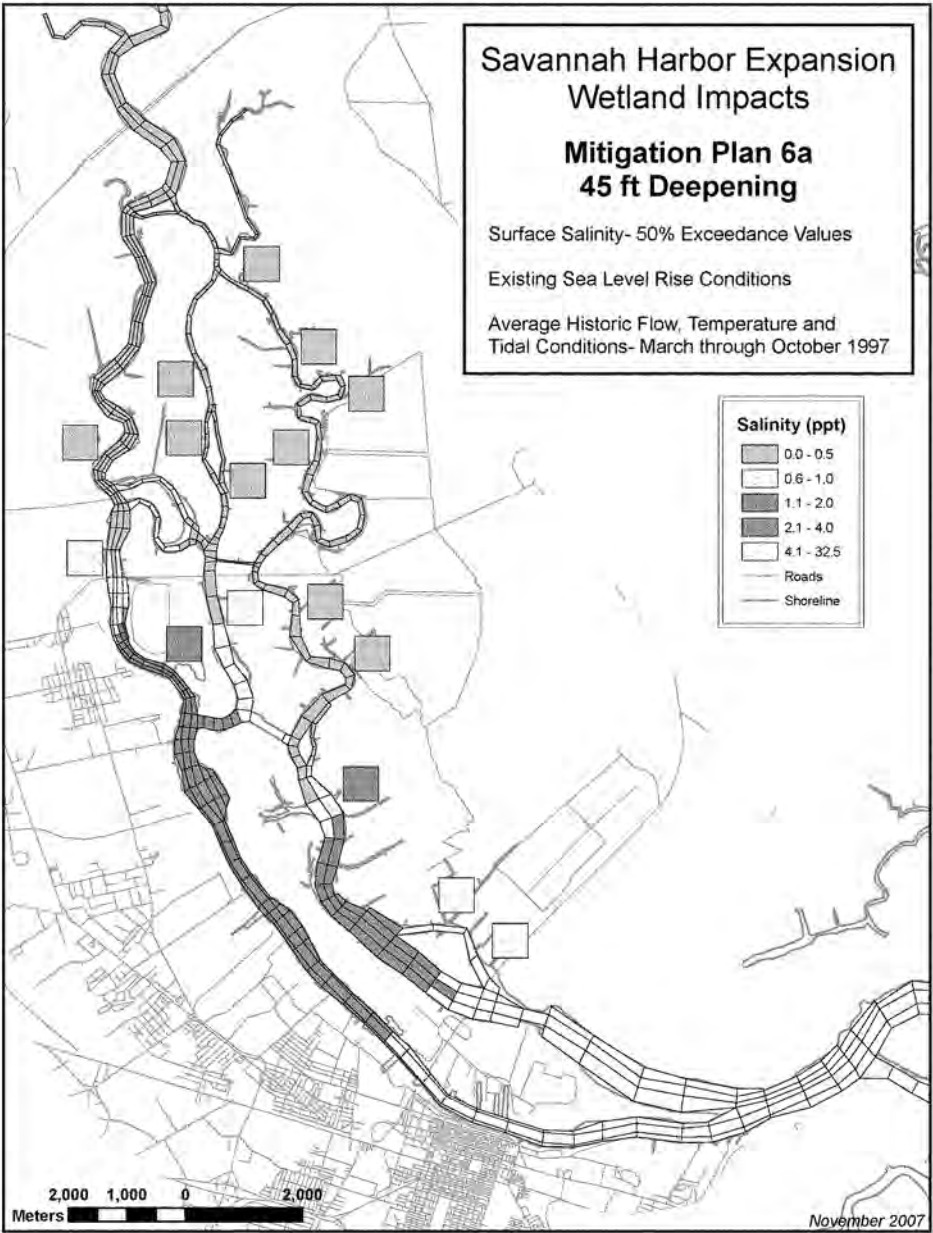


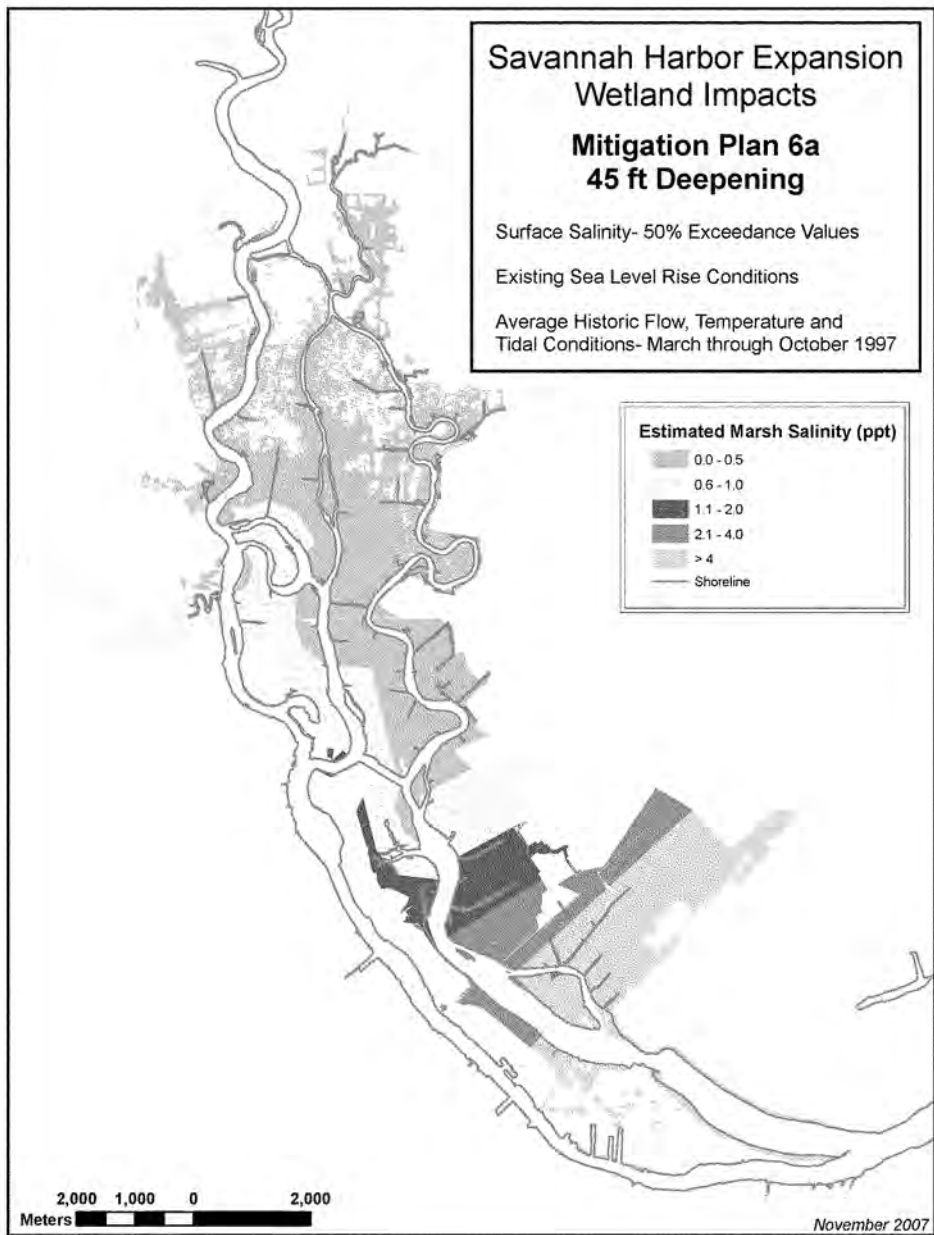






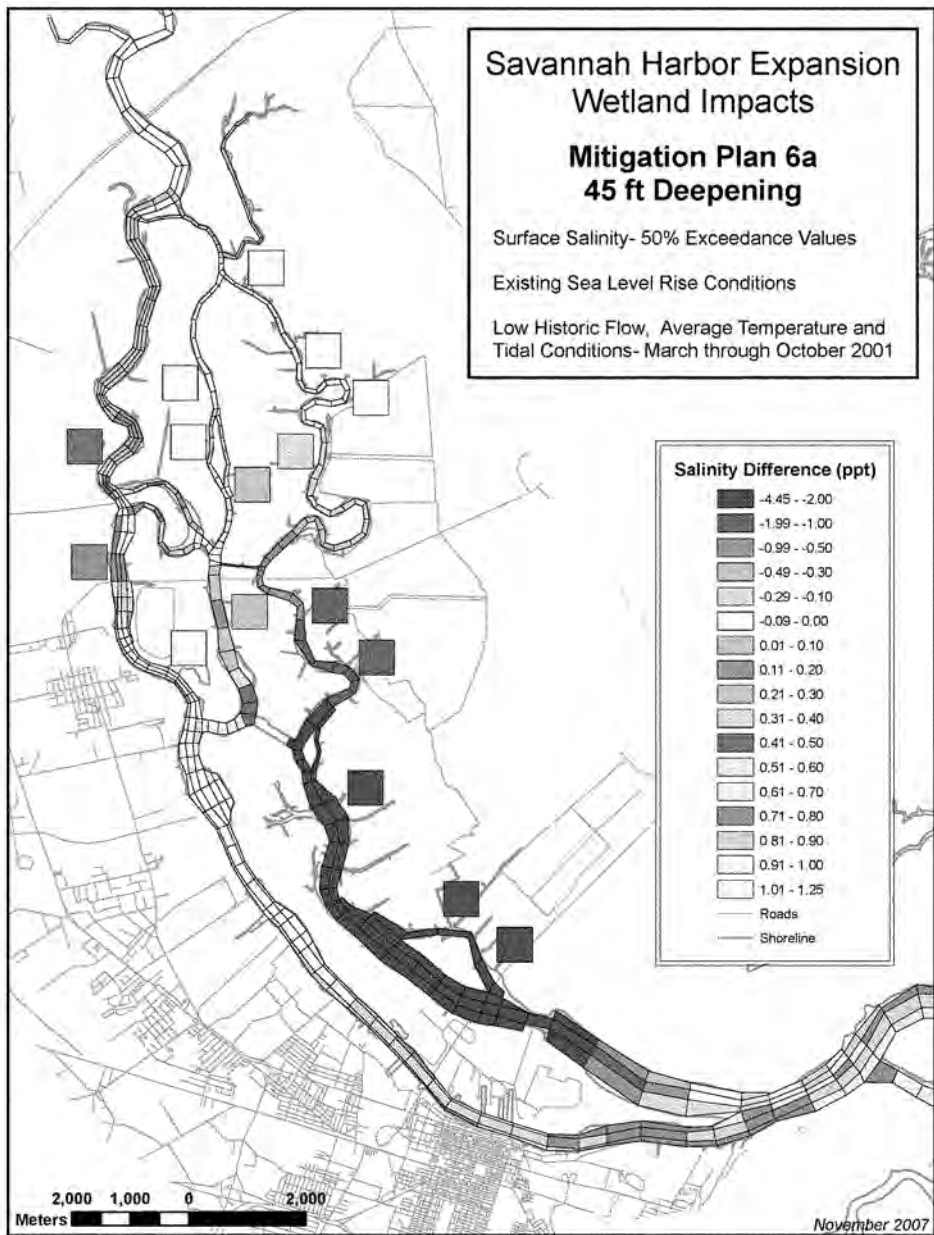


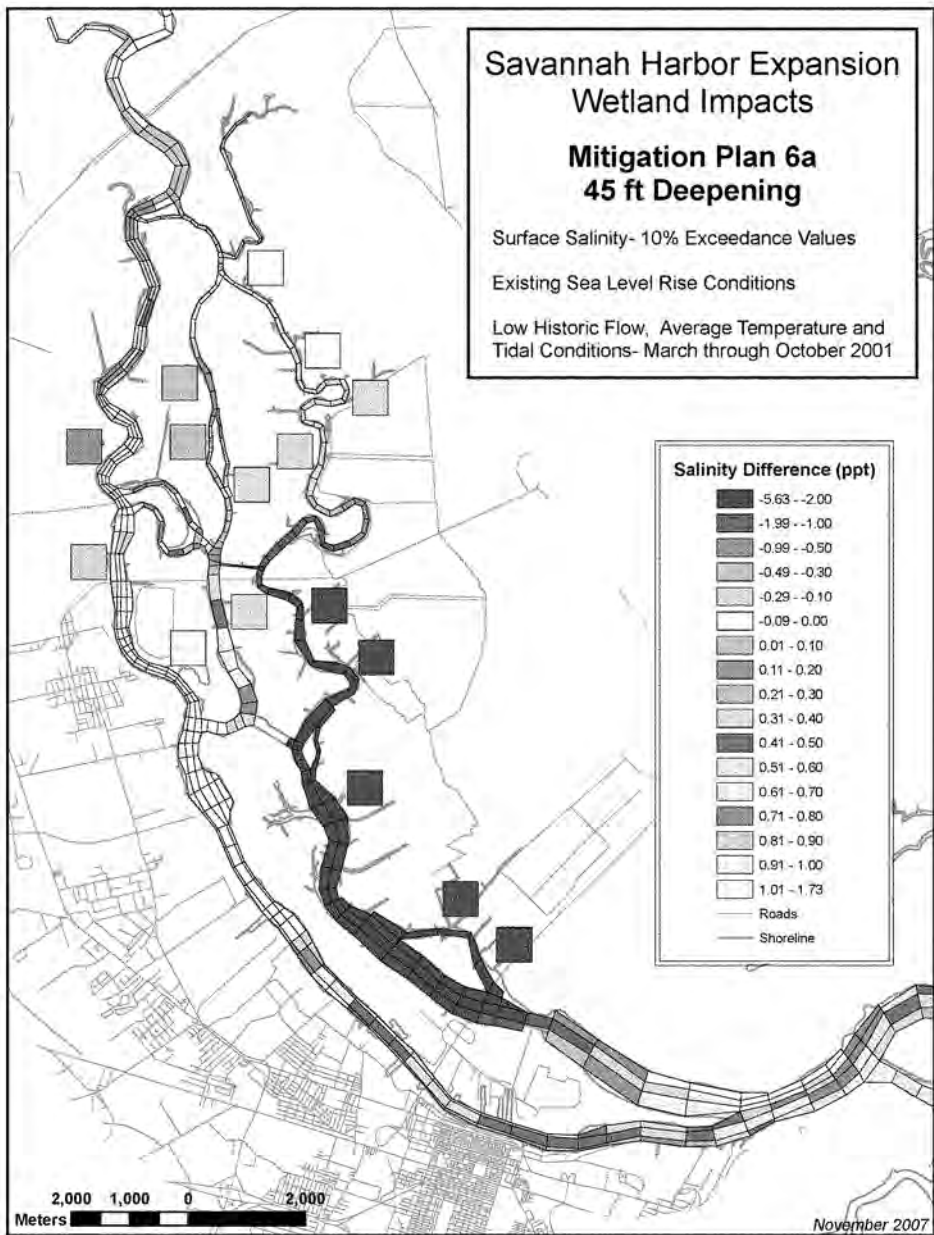


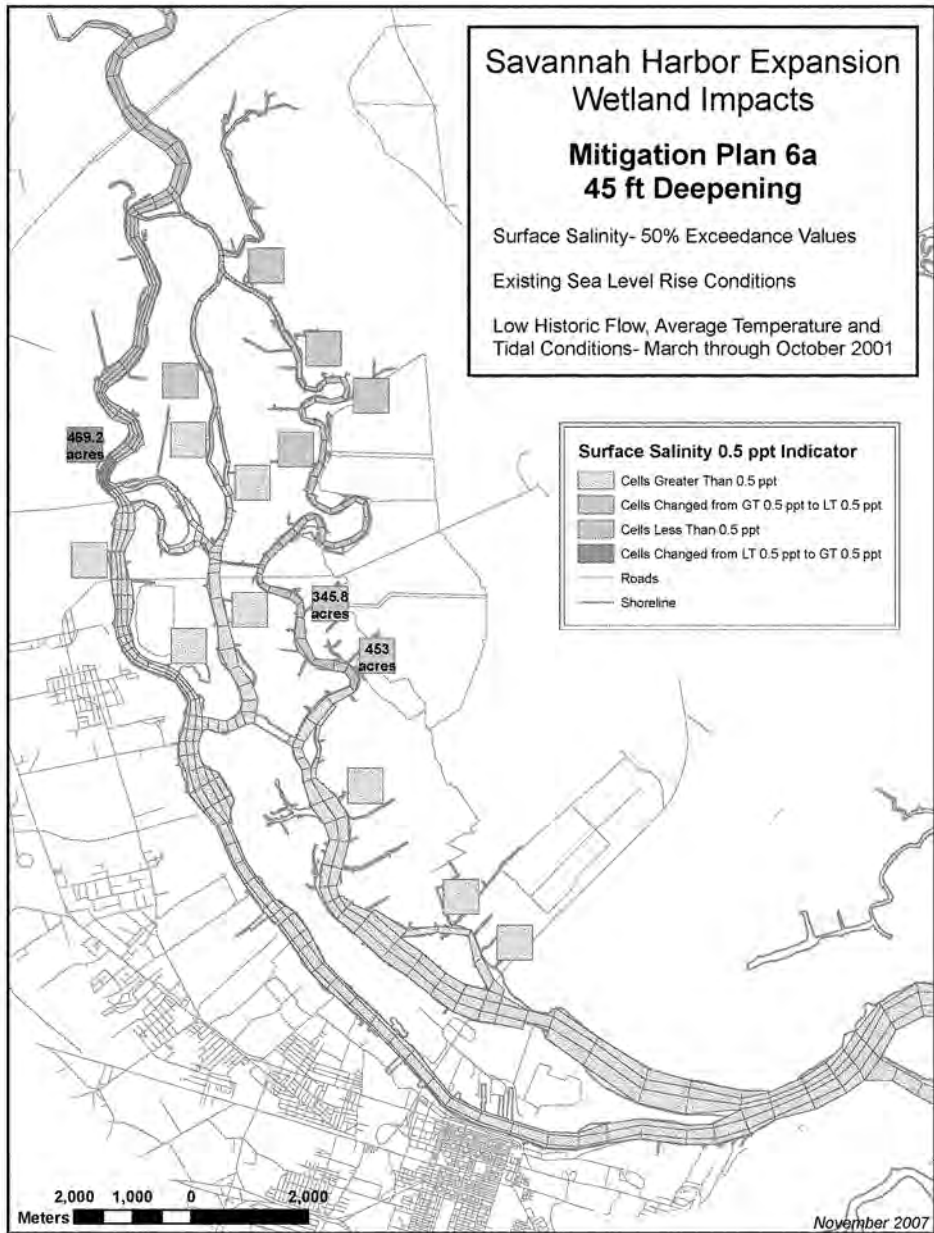


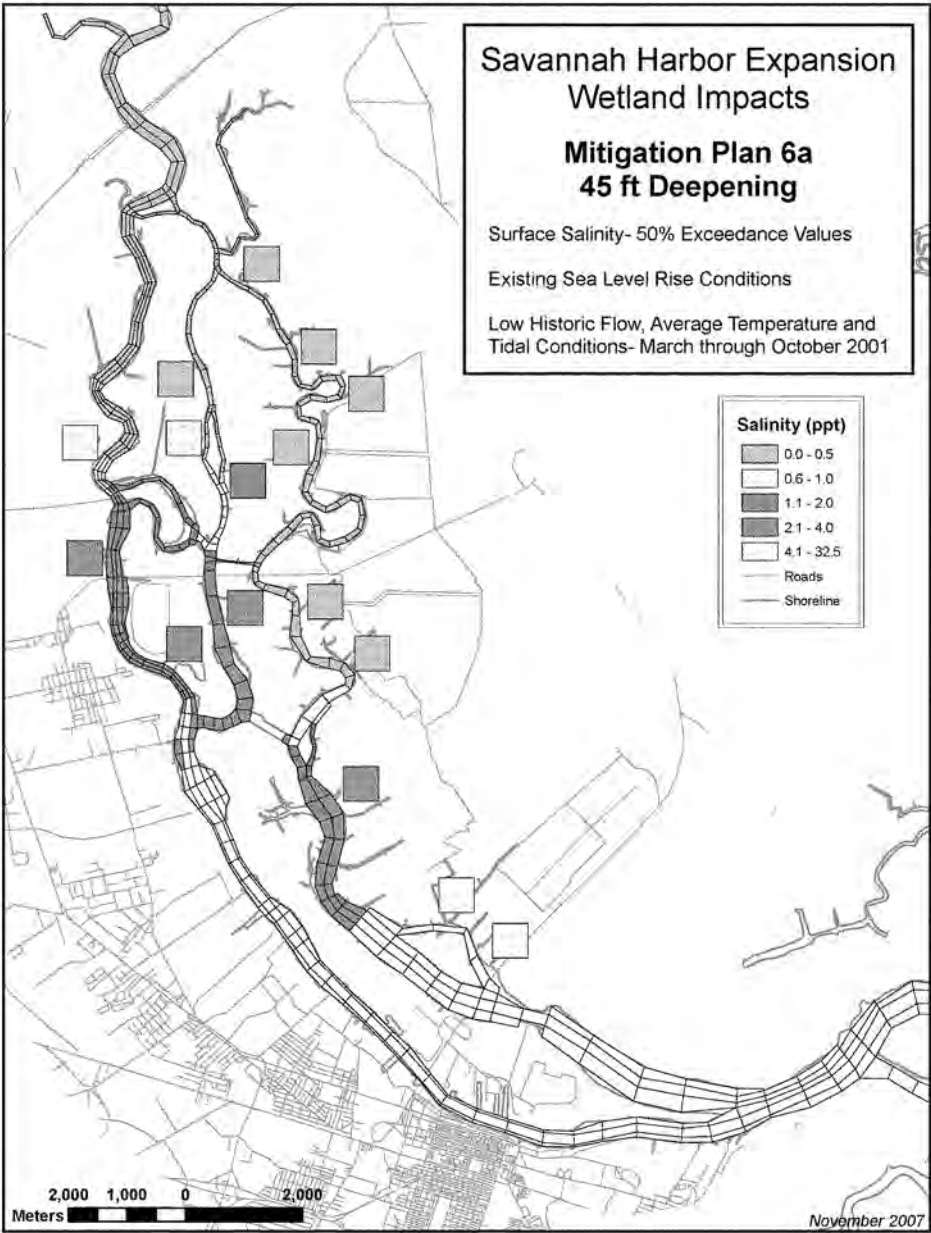
## *Sensitivity Analysis #1*

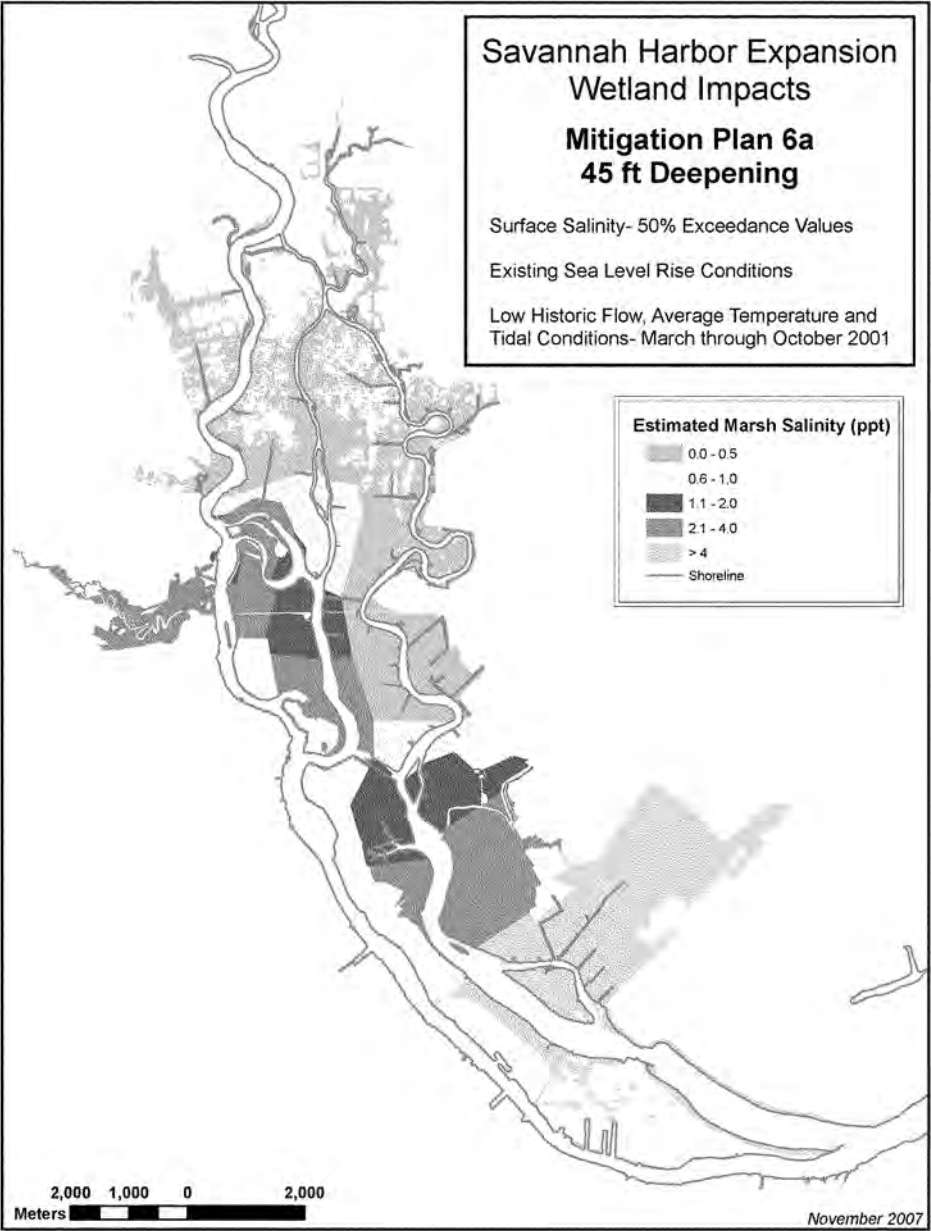
2001 (Low) Flow Conditions- No Sea Level Rise







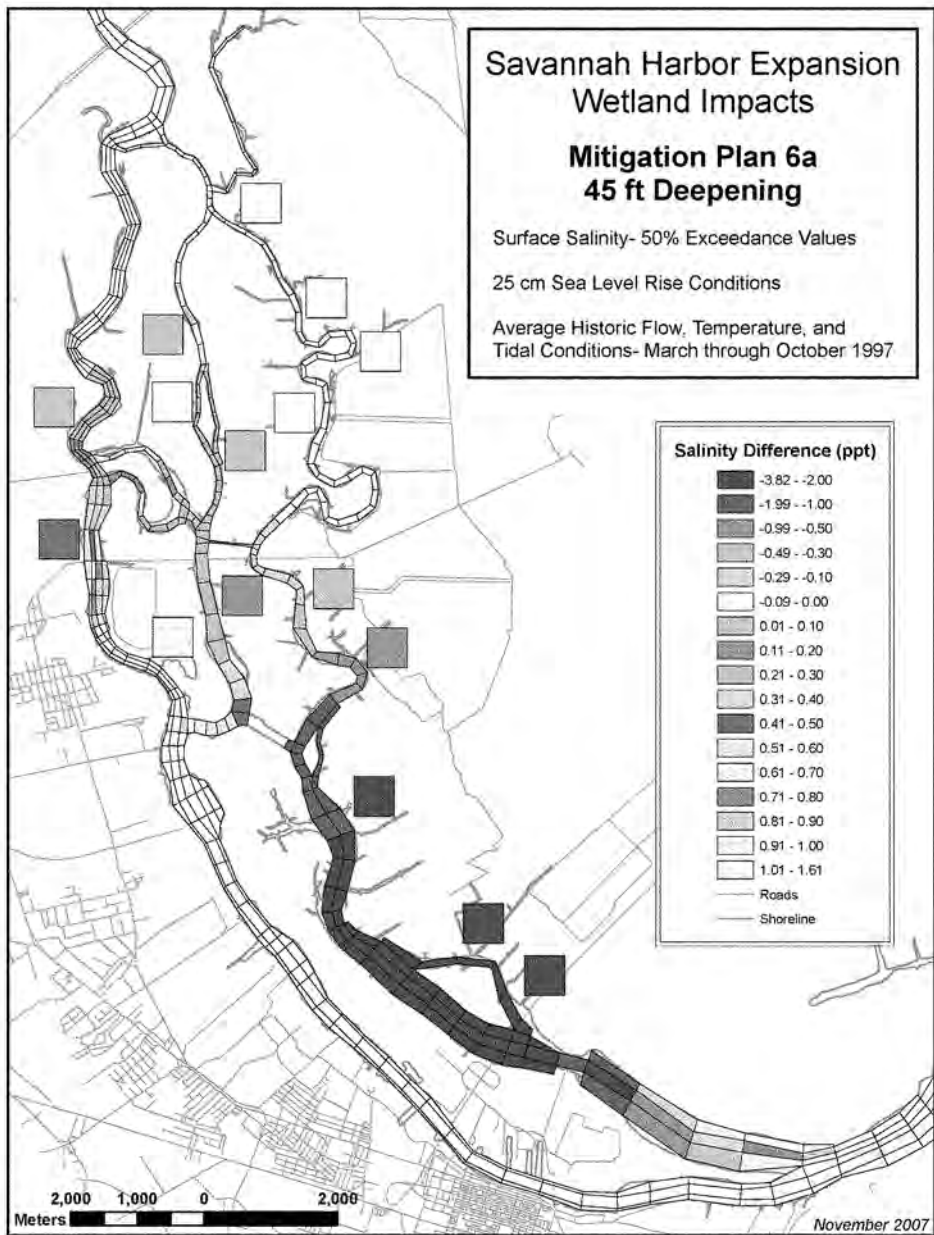


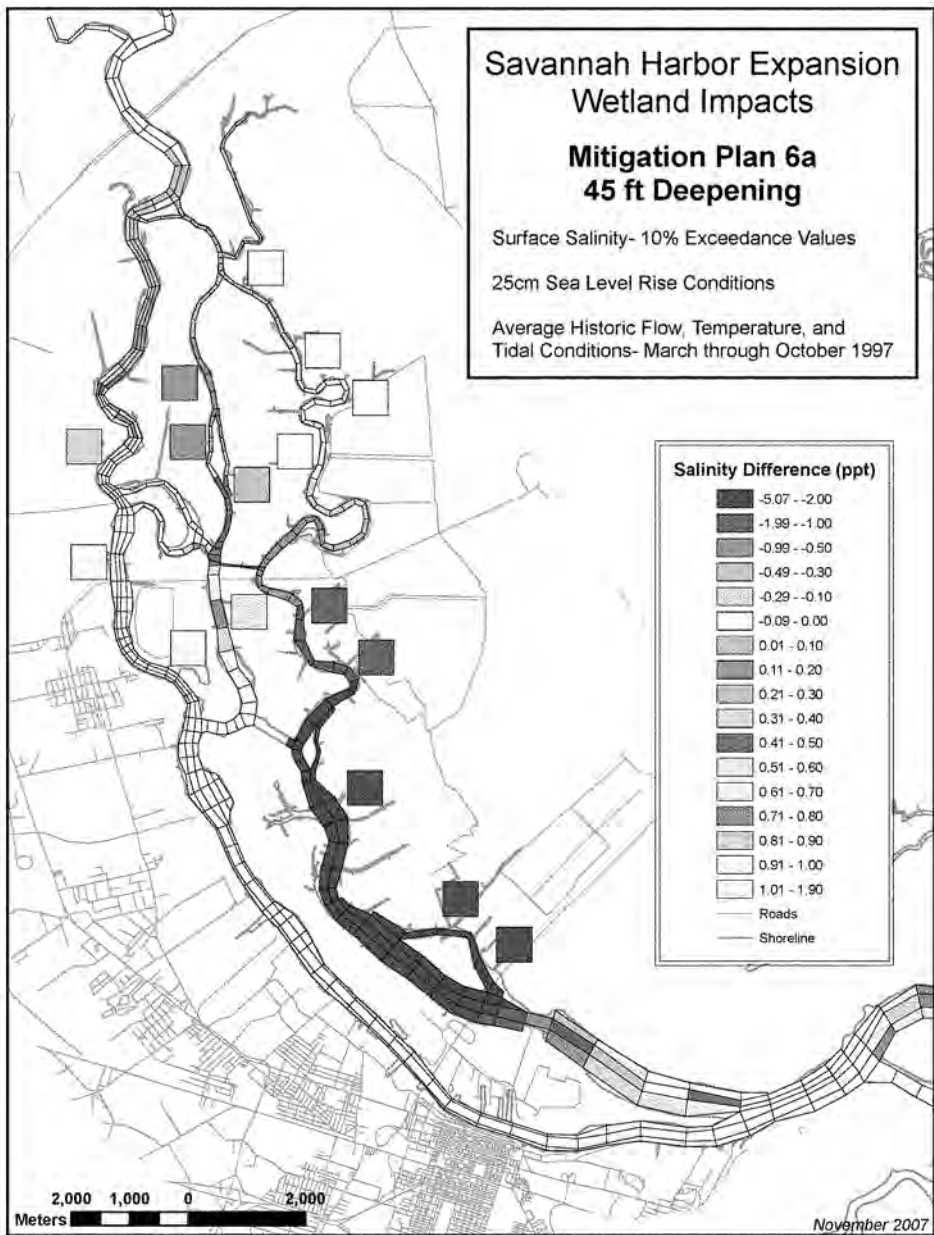


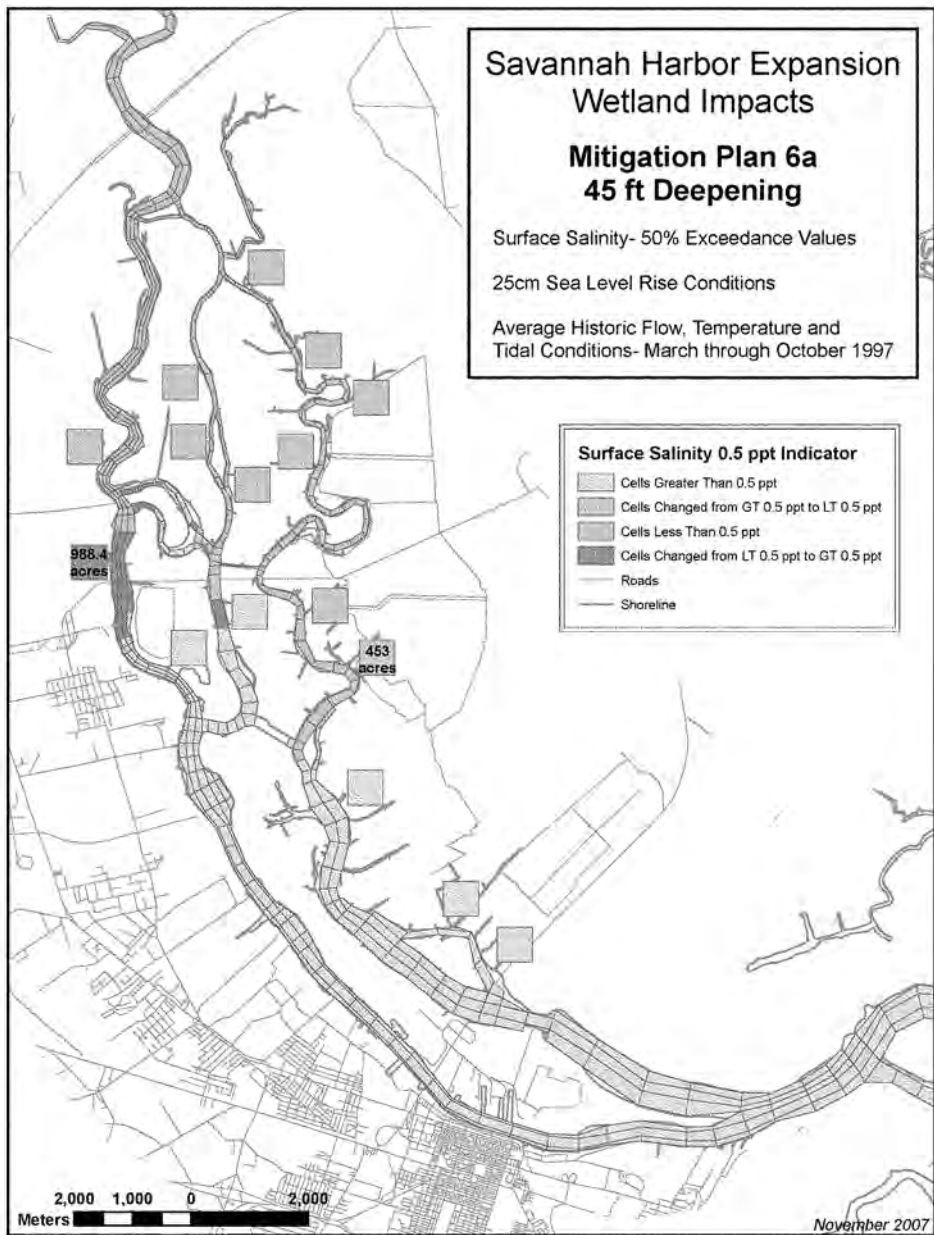


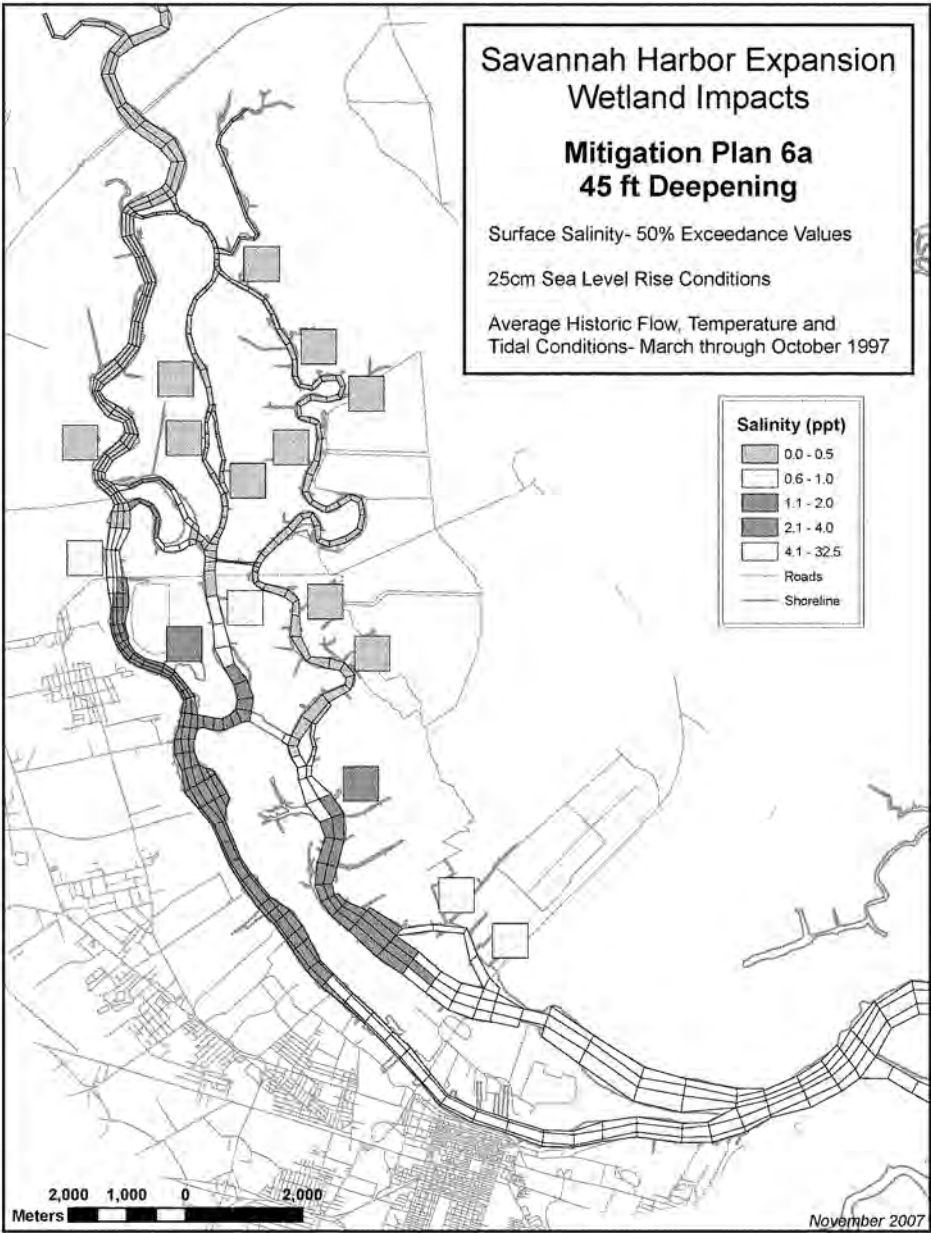
## *Sensitivity Analysis #2A*

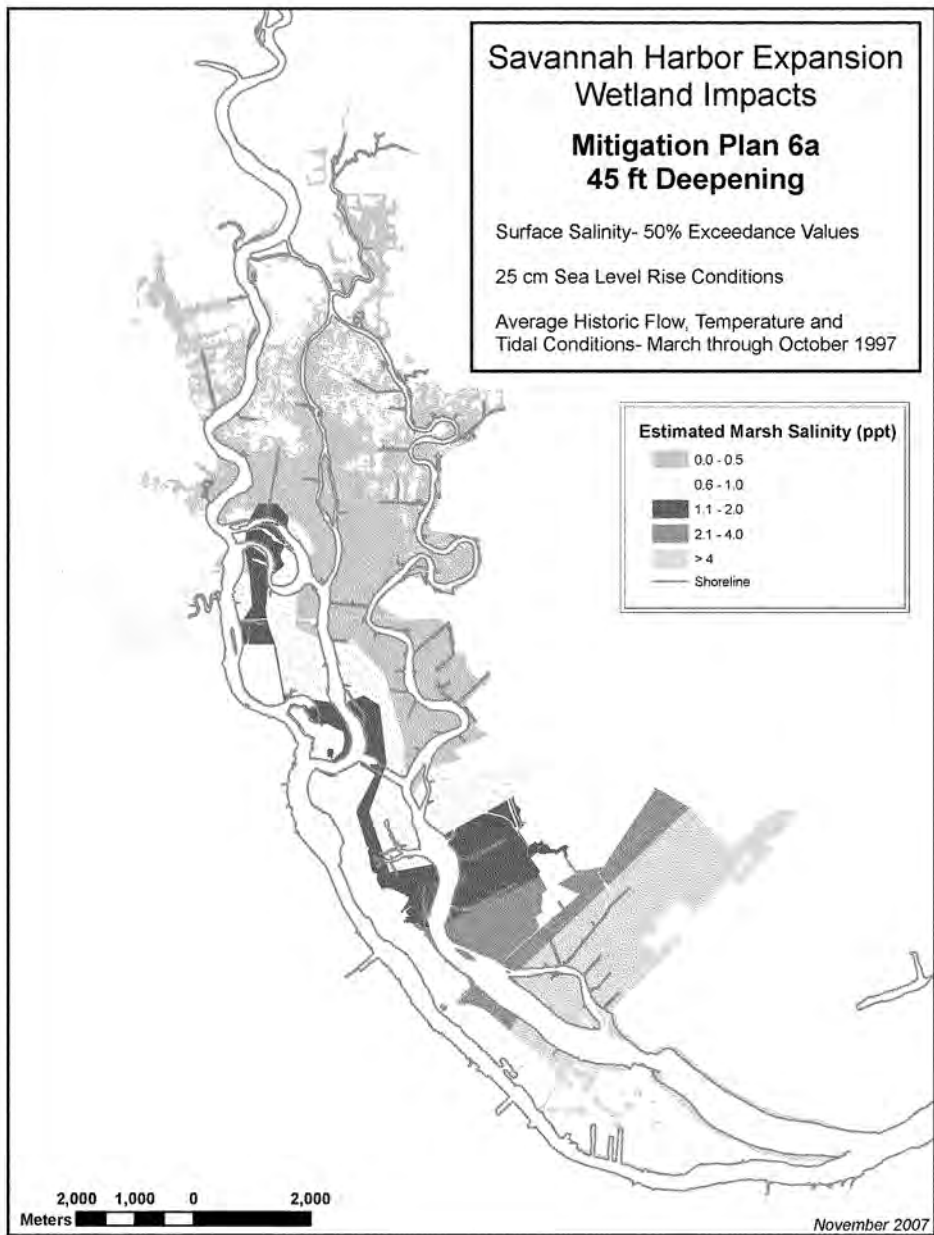
1997 (Average) Flow Conditions- 25cm Sea Level Rise





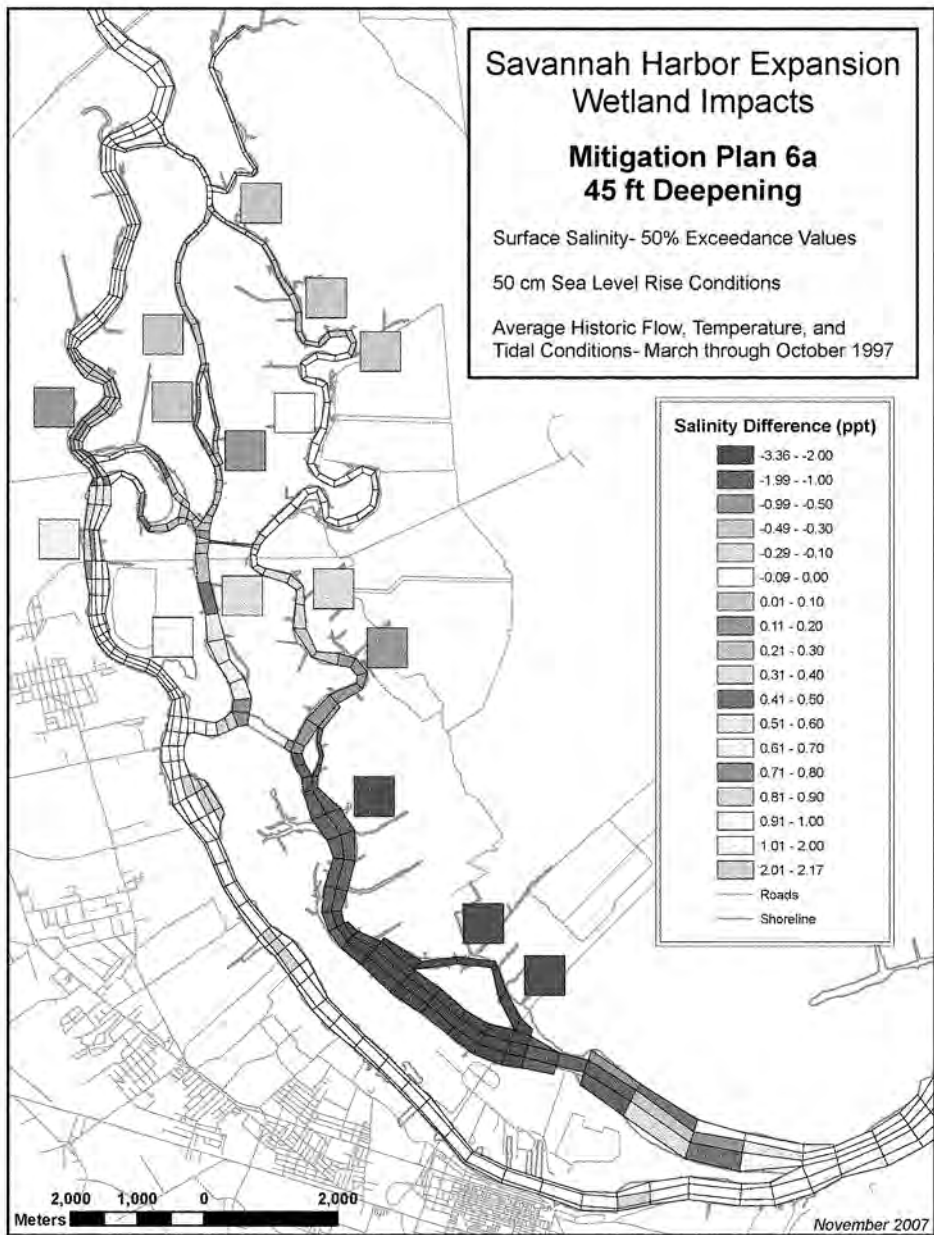




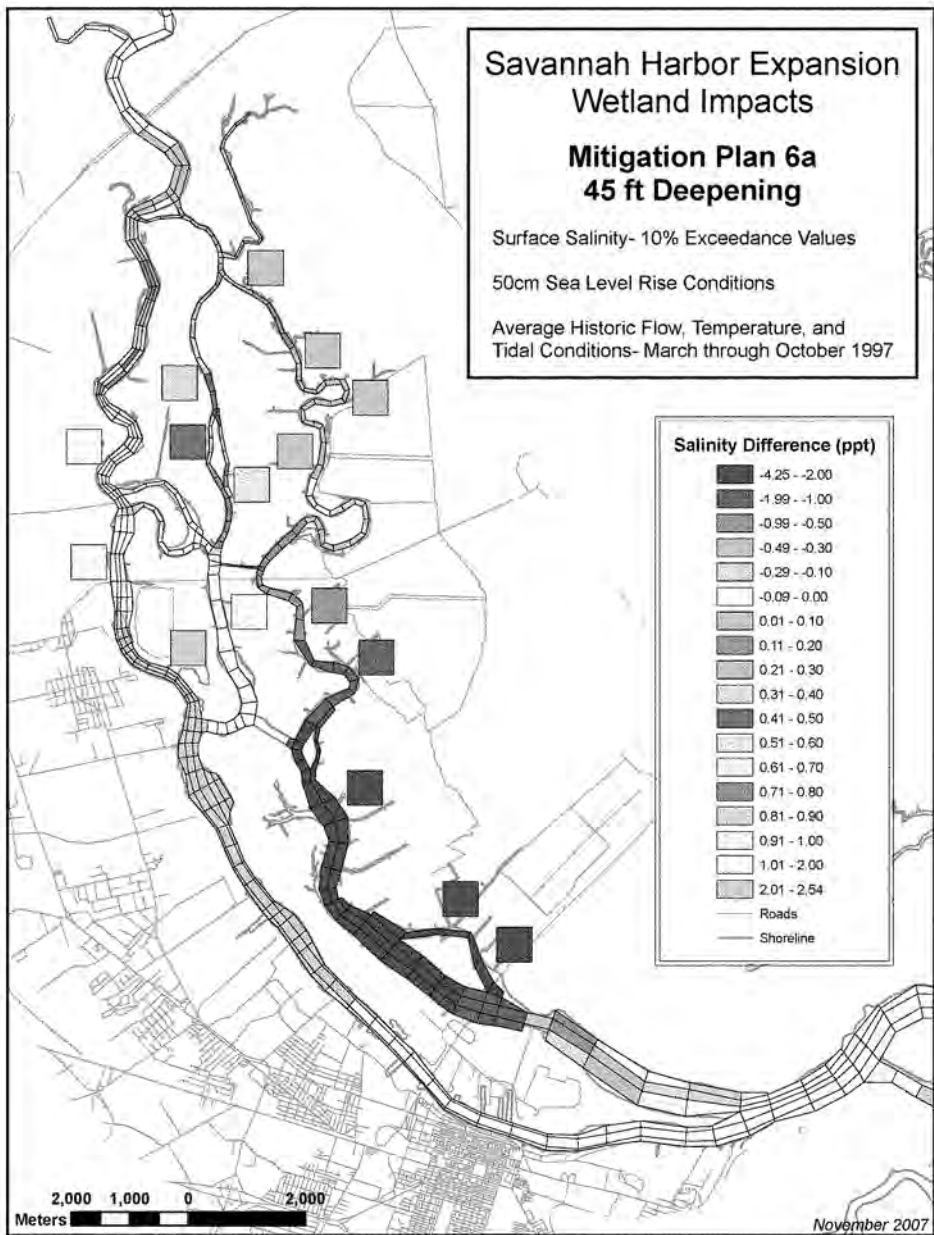


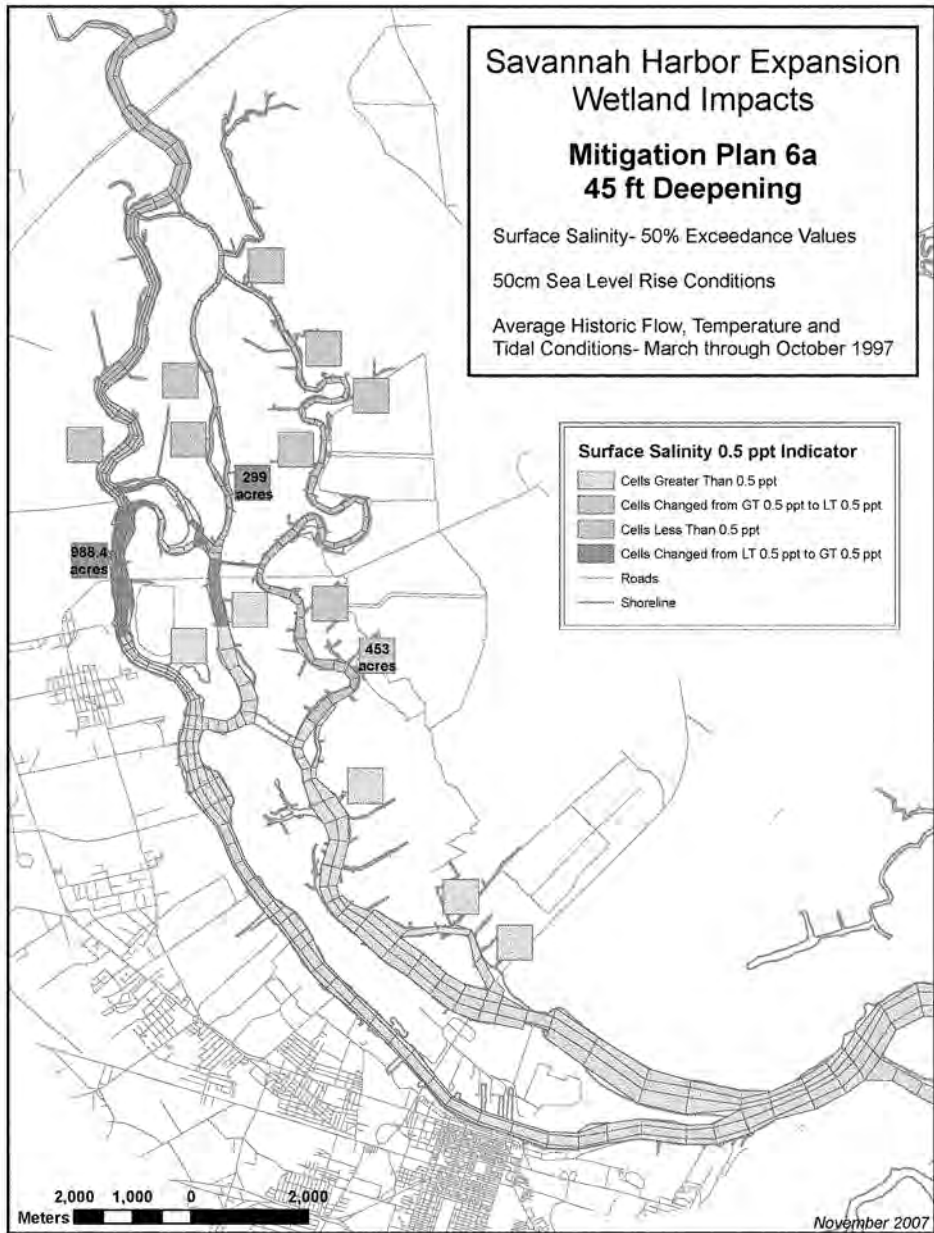
## *Sensitivity Analysis #2B*

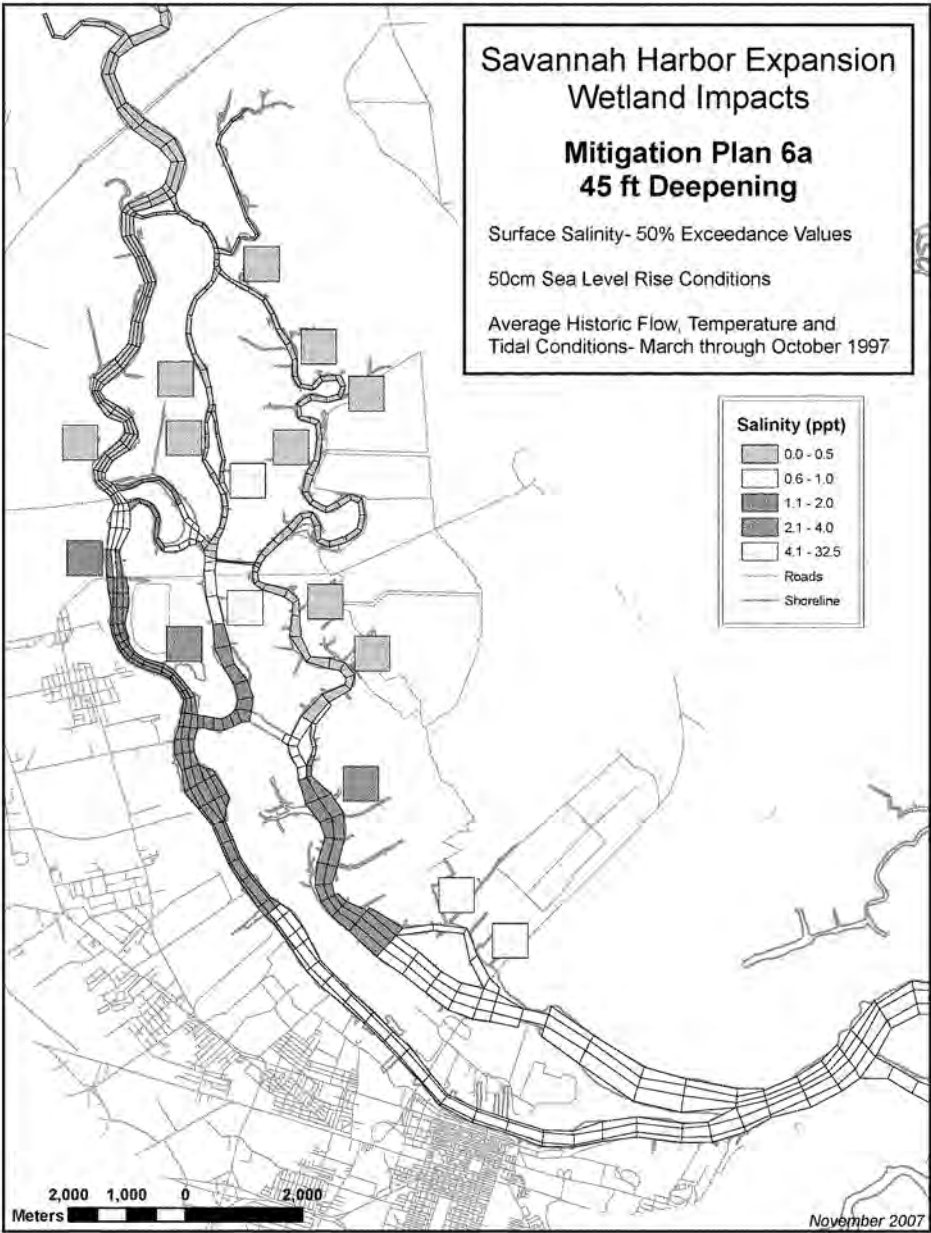
1997 (Average) Flow Conditions- 50cm Sea Level Rise

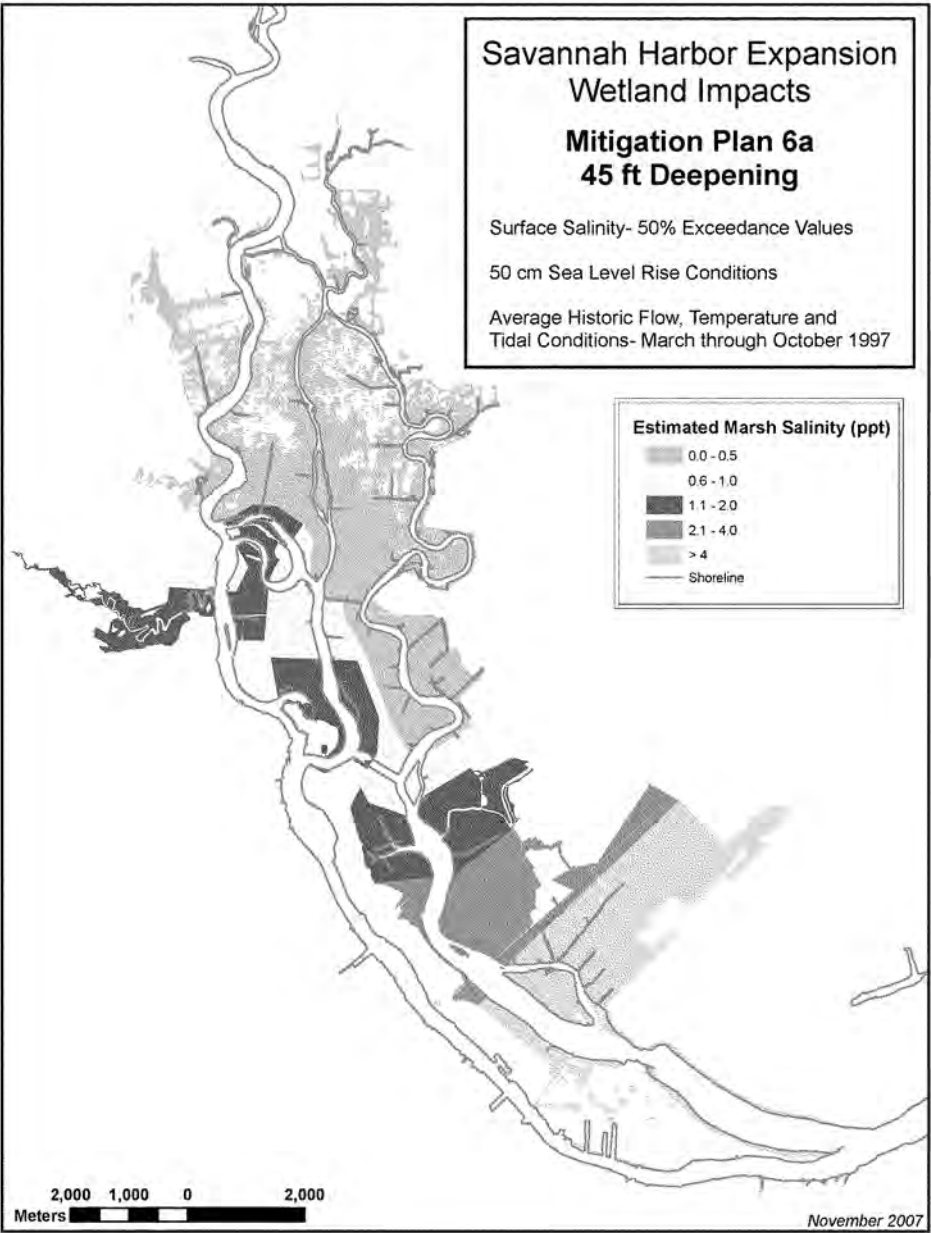










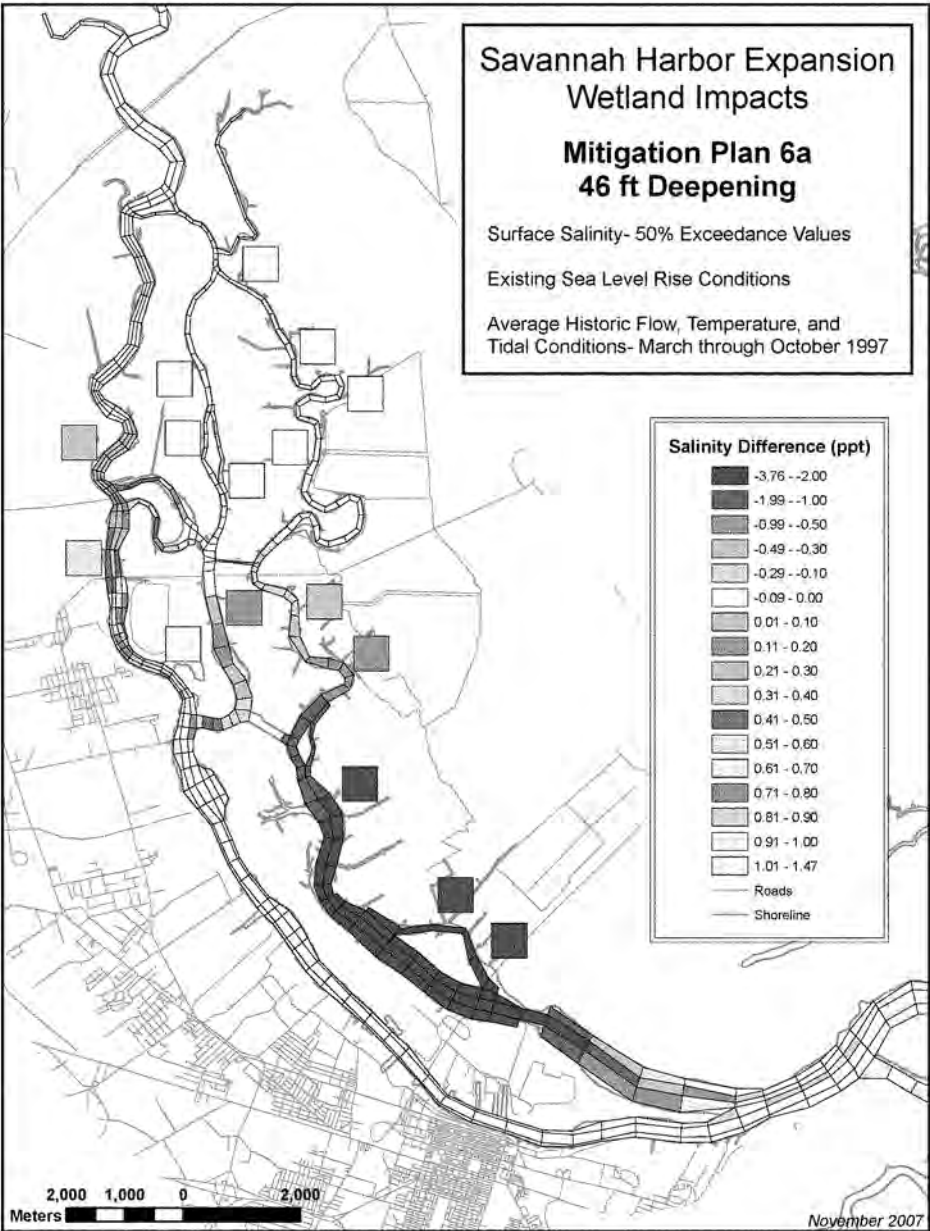


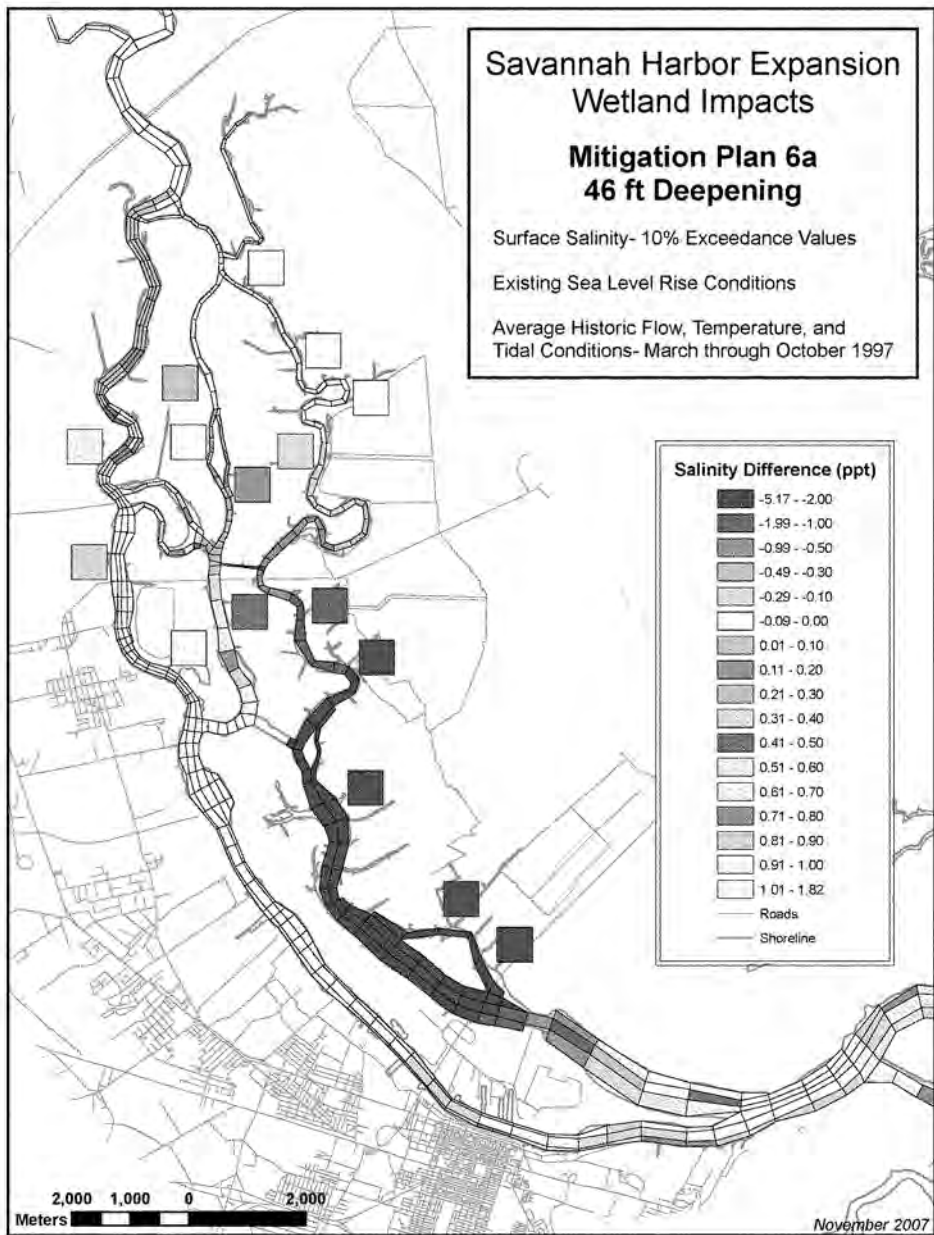
# **46 ft Channel Depth**

## *Mitigation Plan 6a*

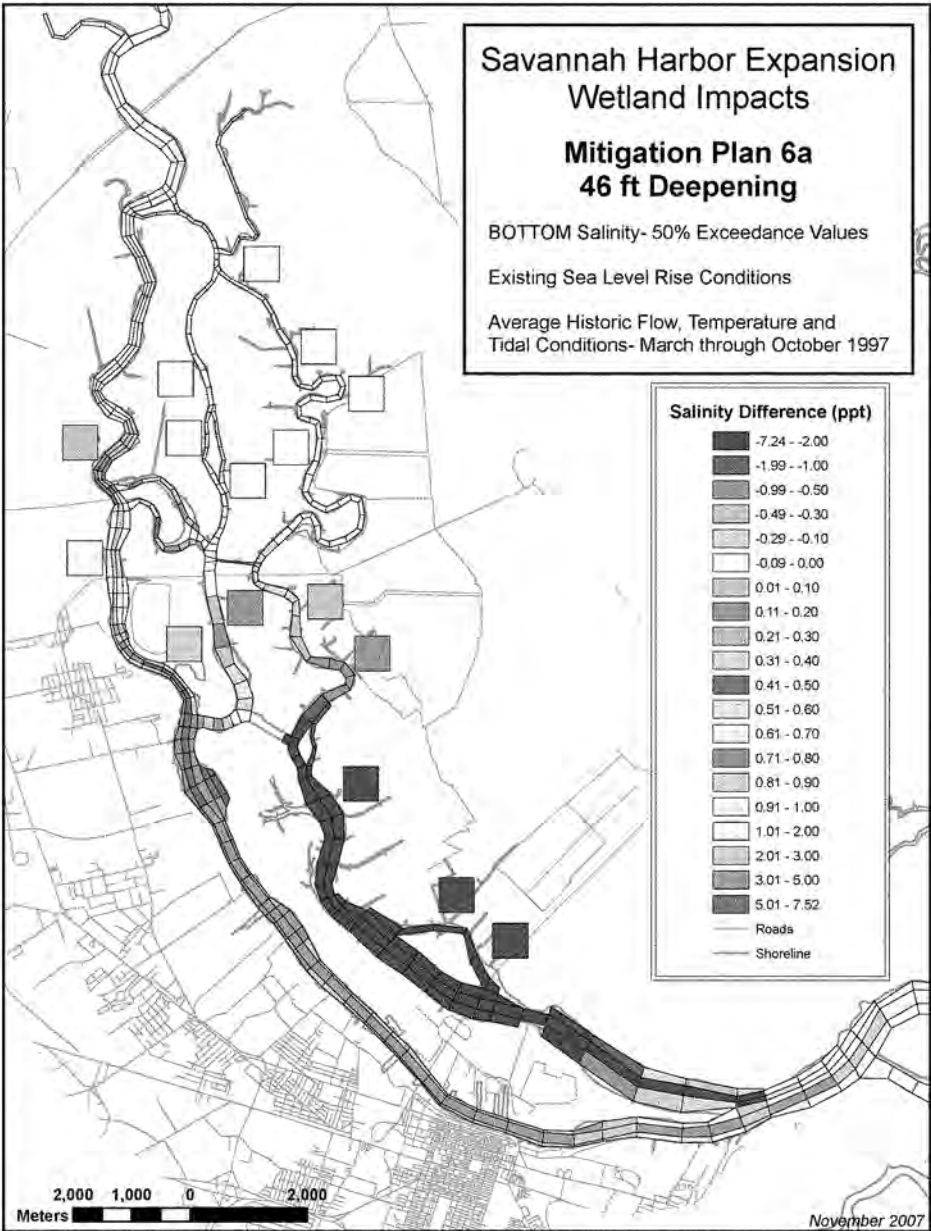
## *Basic Evaluation*

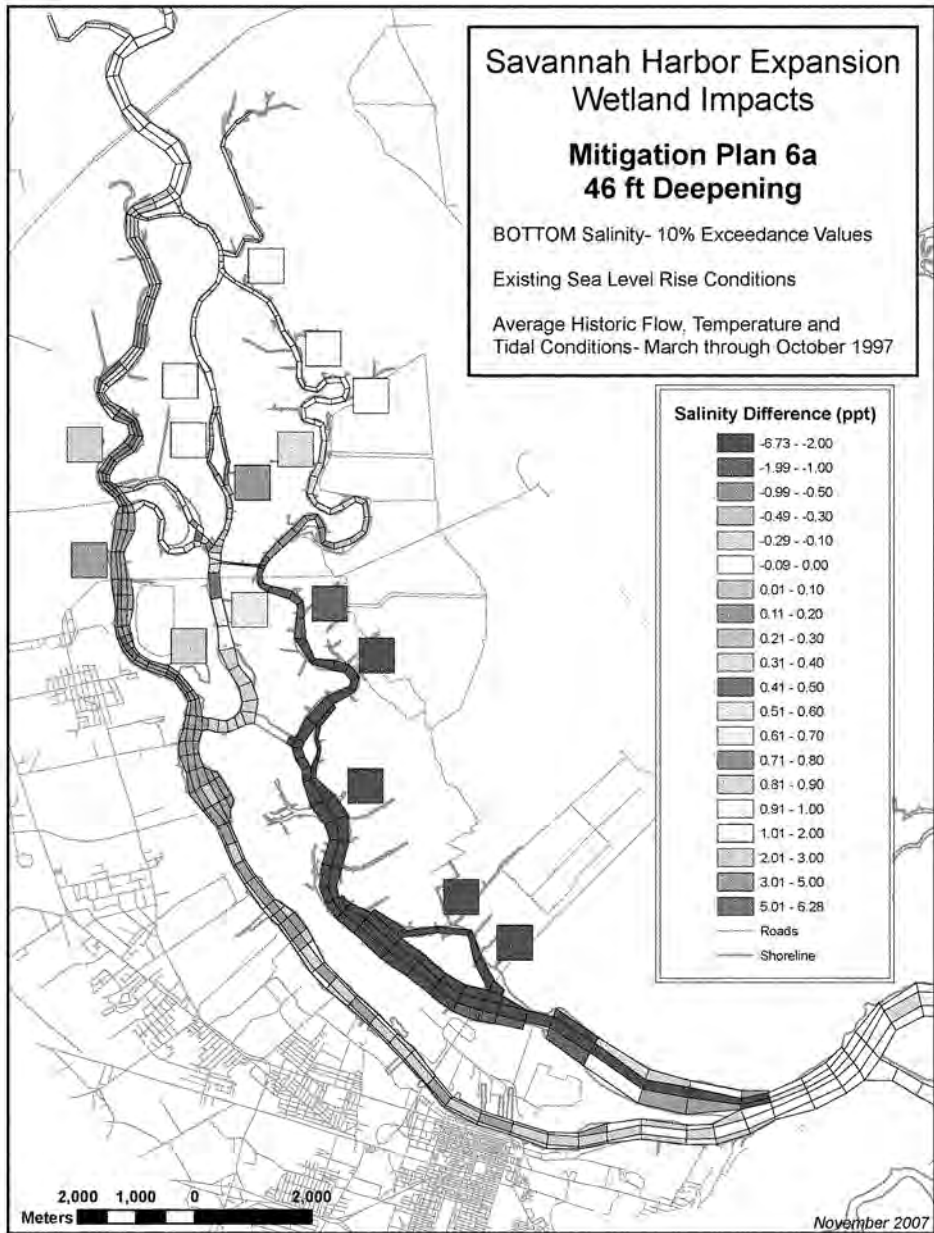
1997 (Average) Flow Conditions- No Sea Level Rise

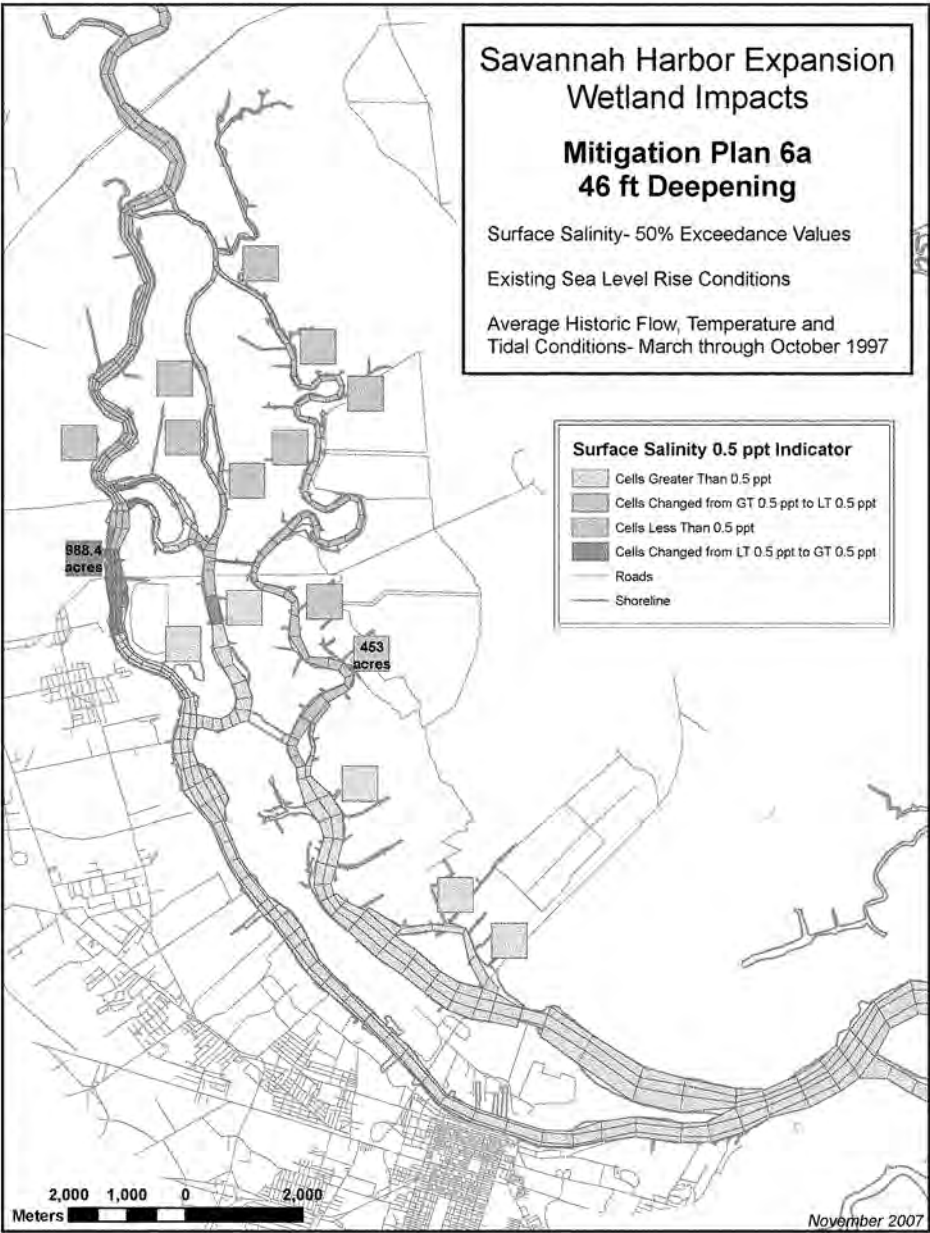


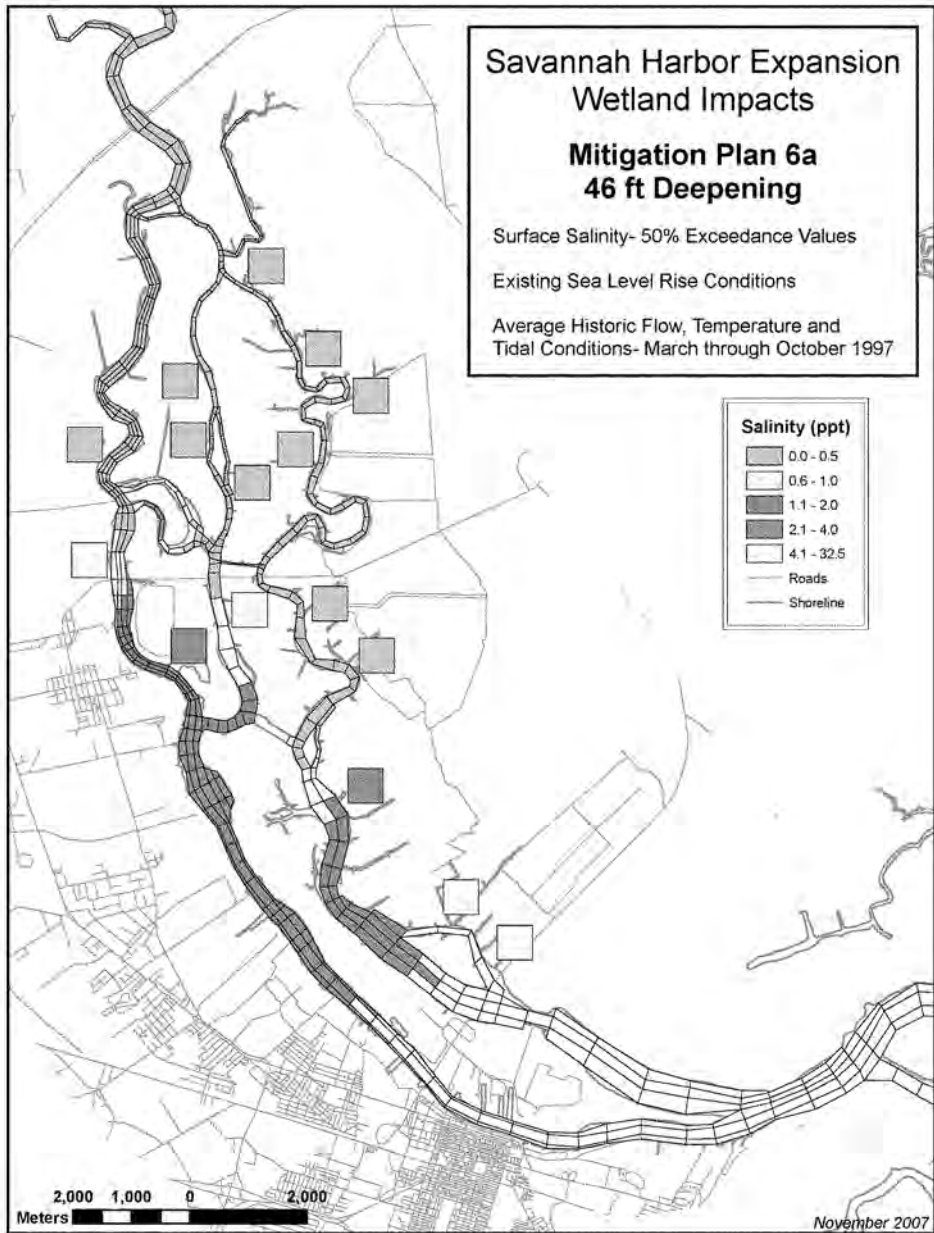


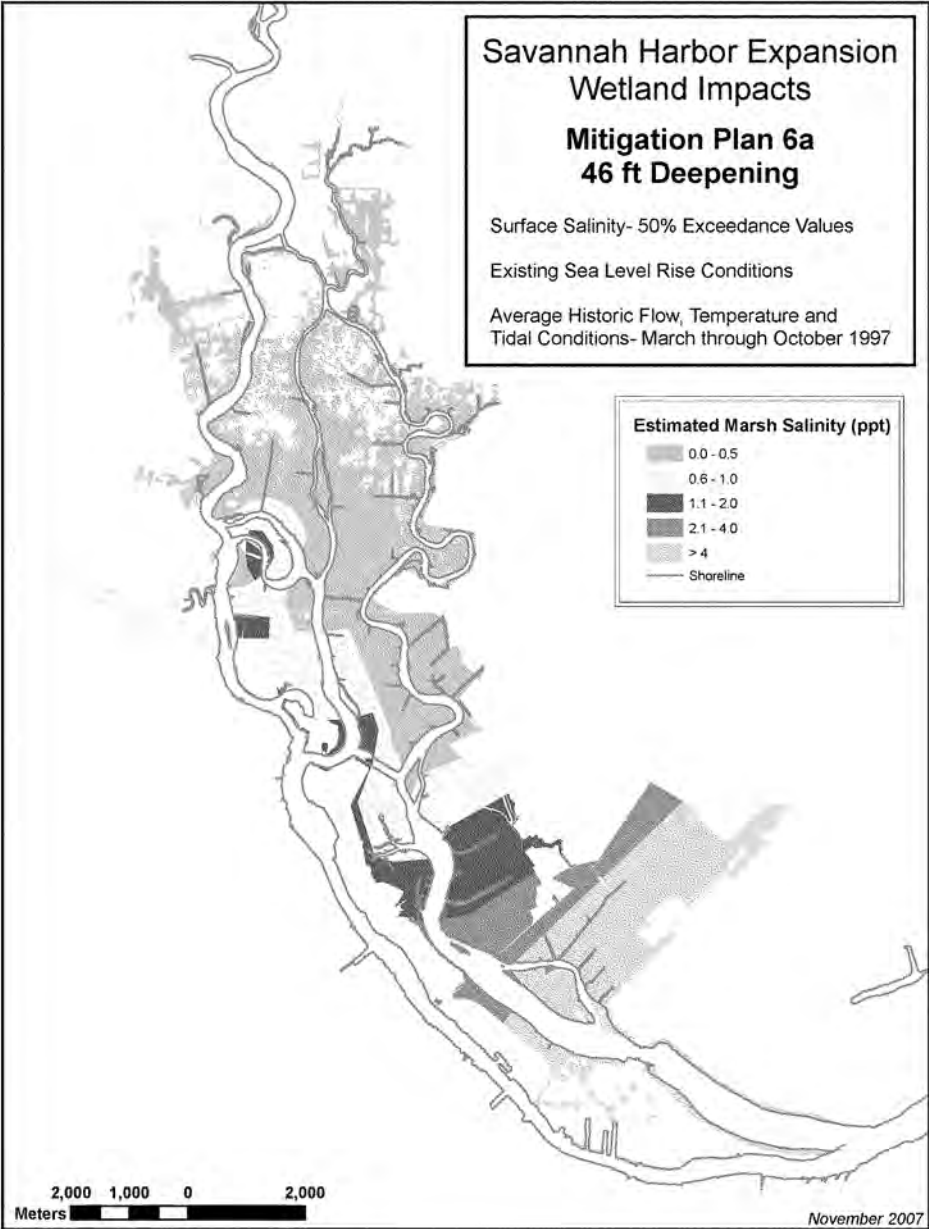






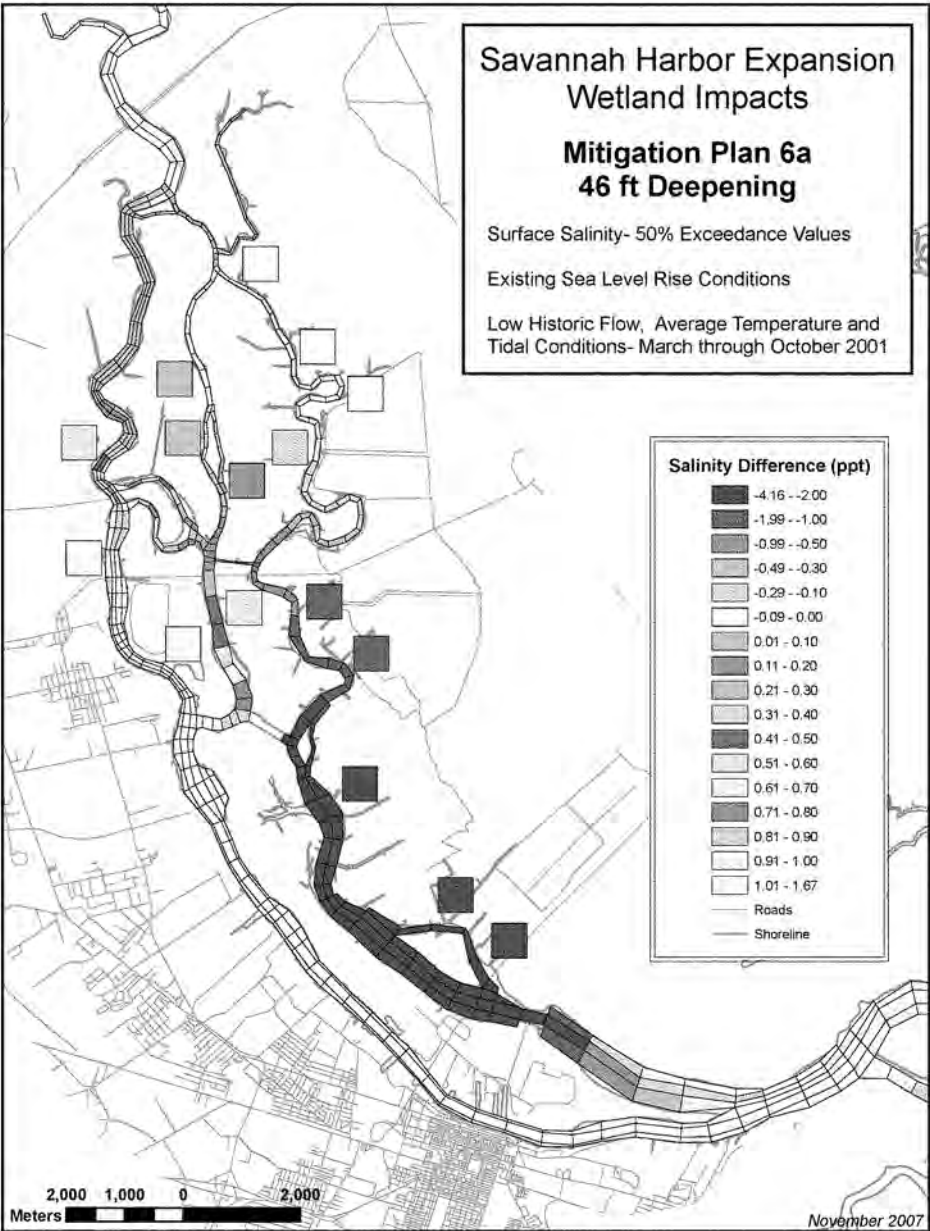


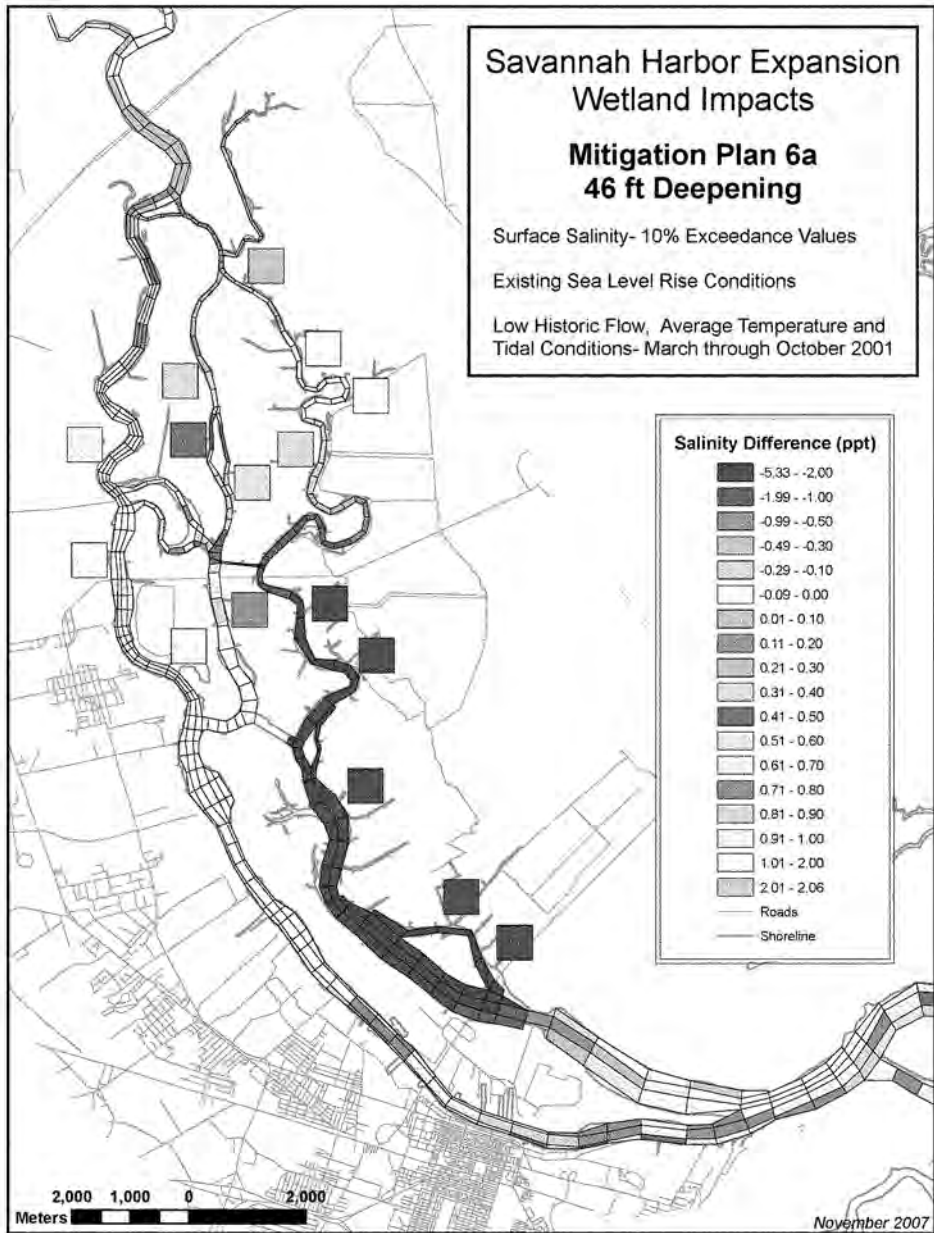




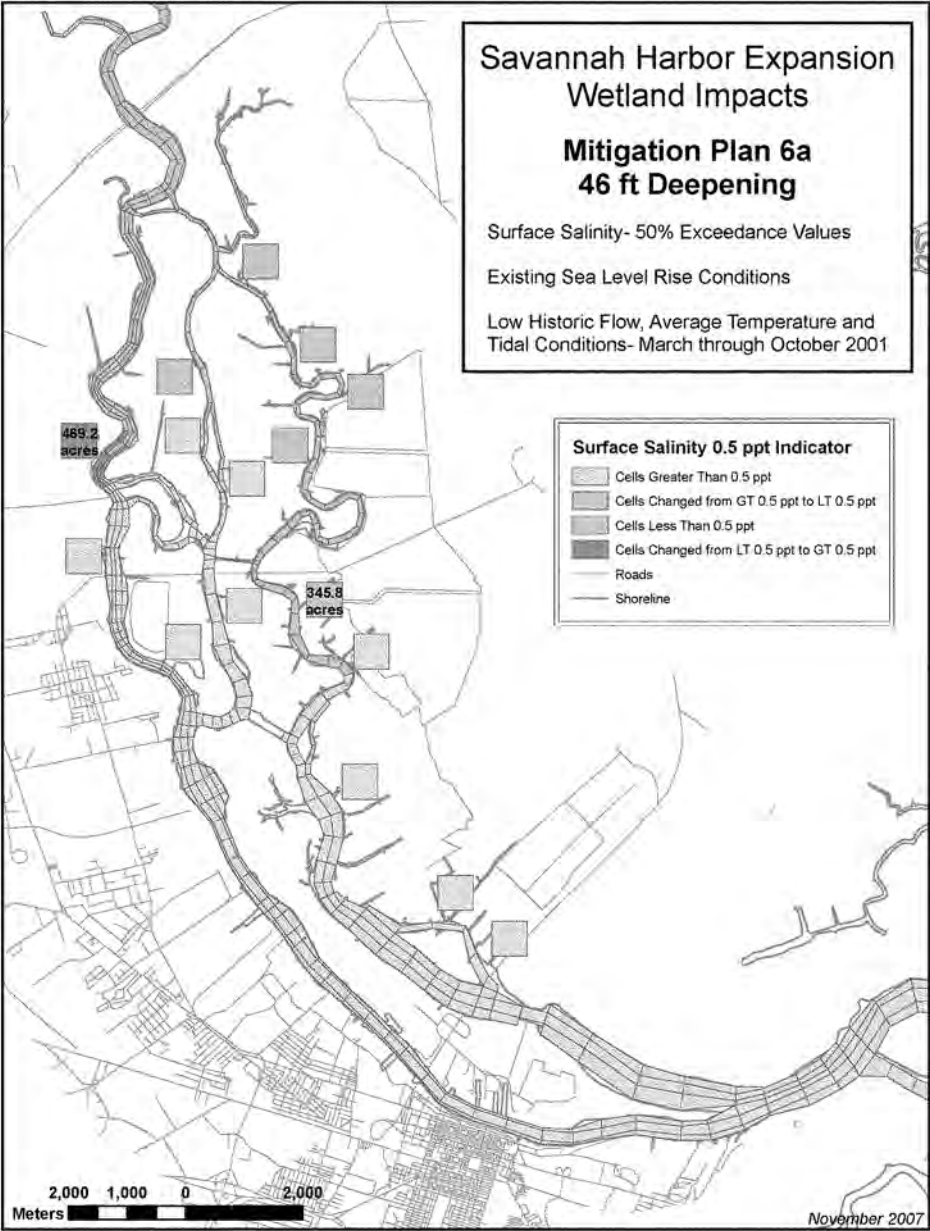
# *Sensitivity Analysis #1*

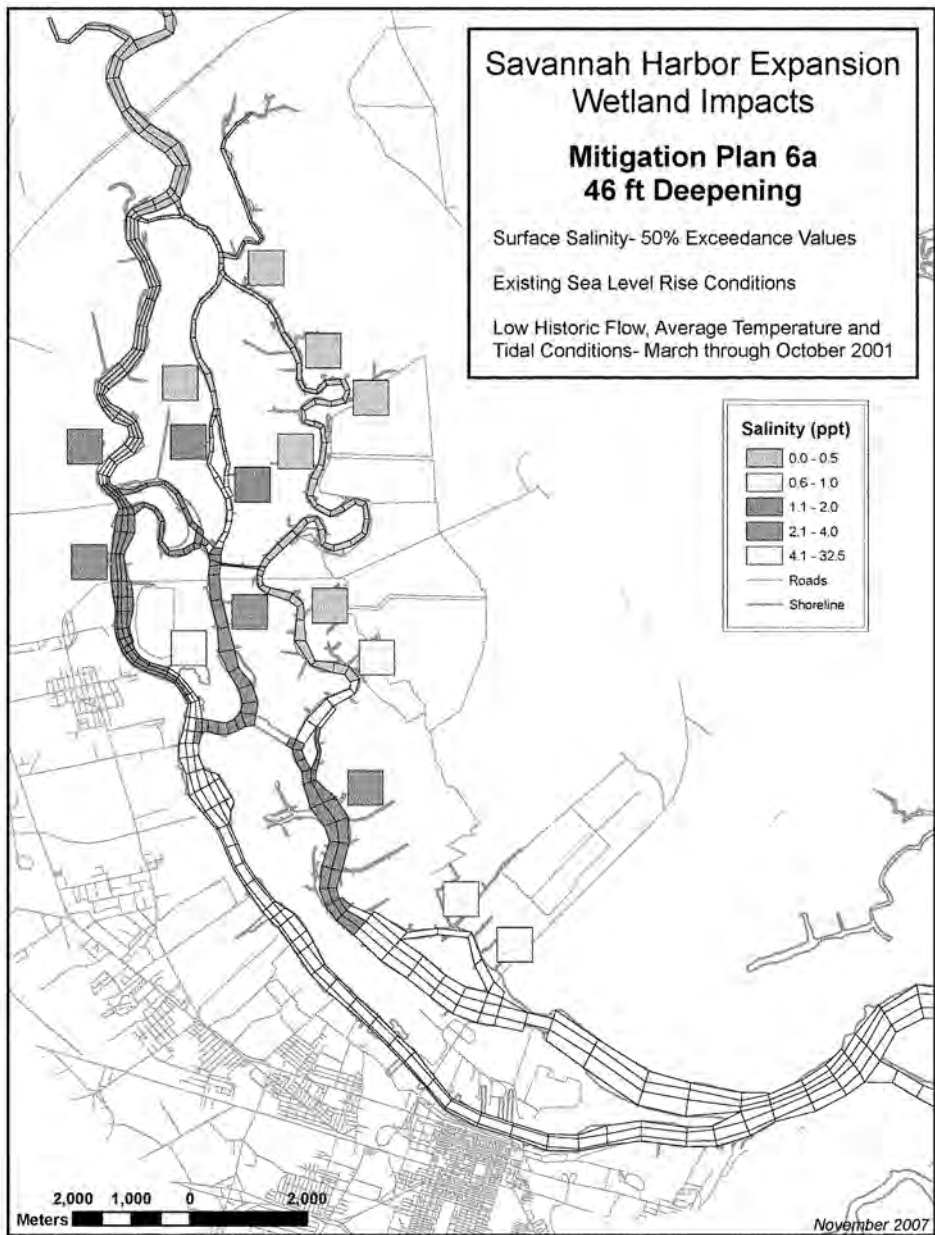
2001 (Low) Flow Conditions- No Sea Level Rise

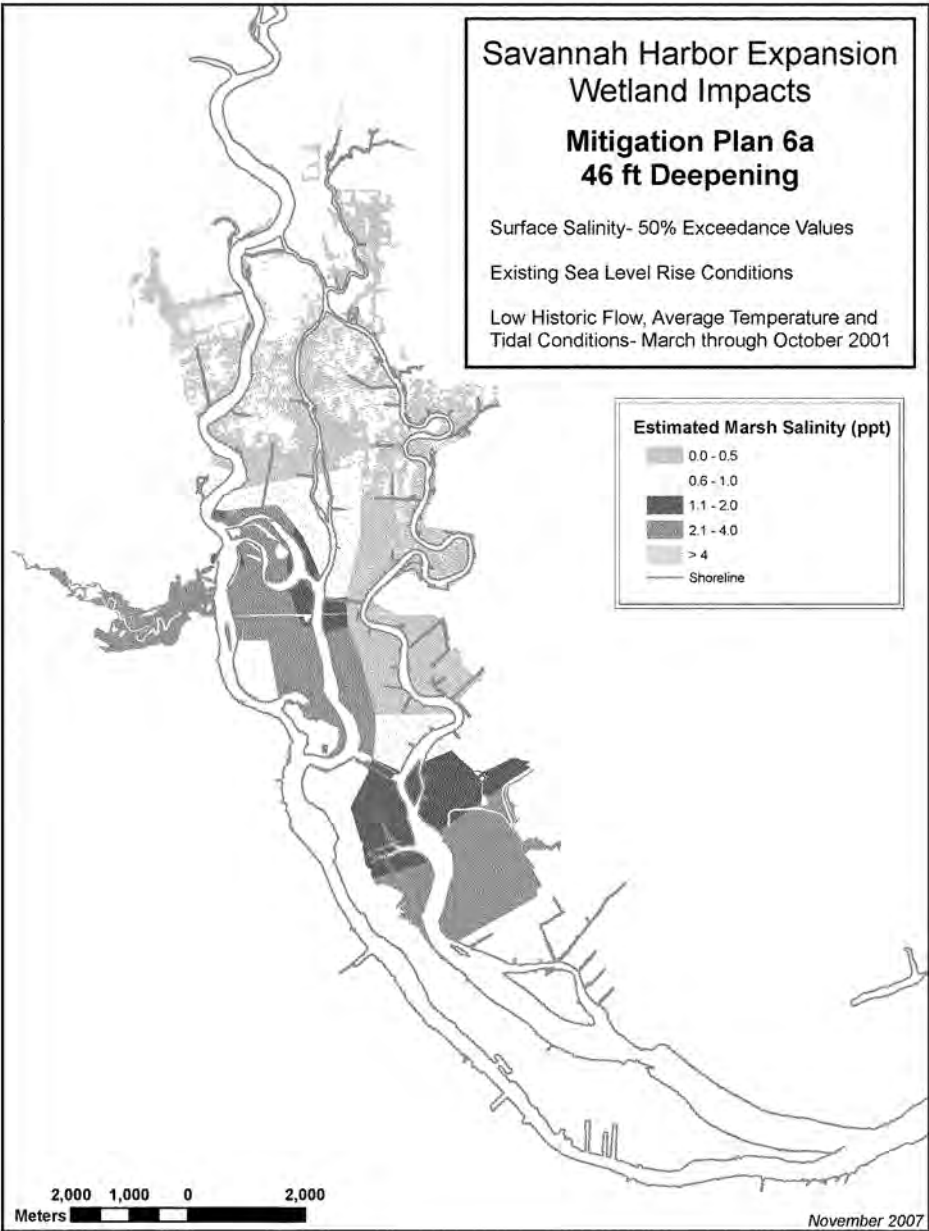






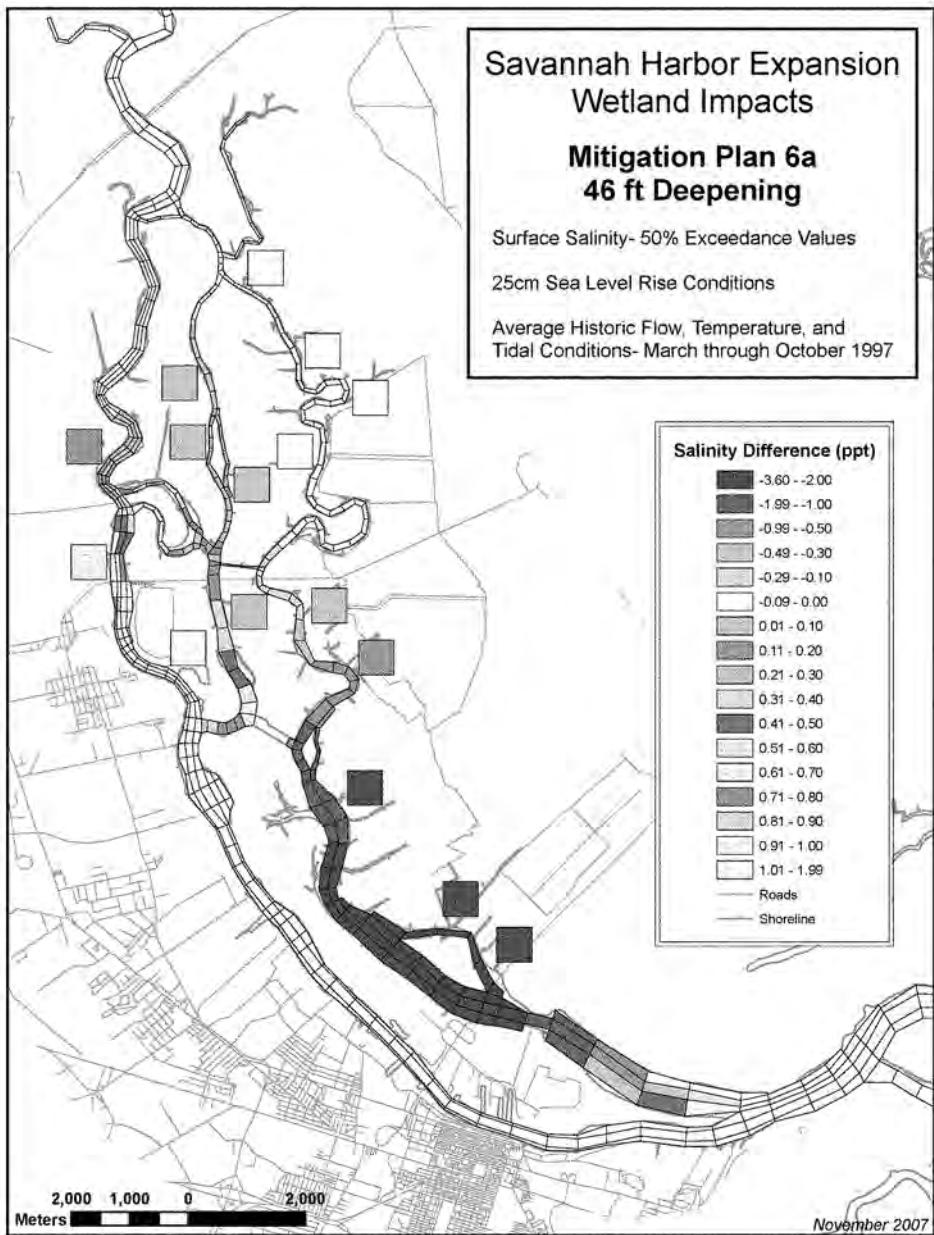


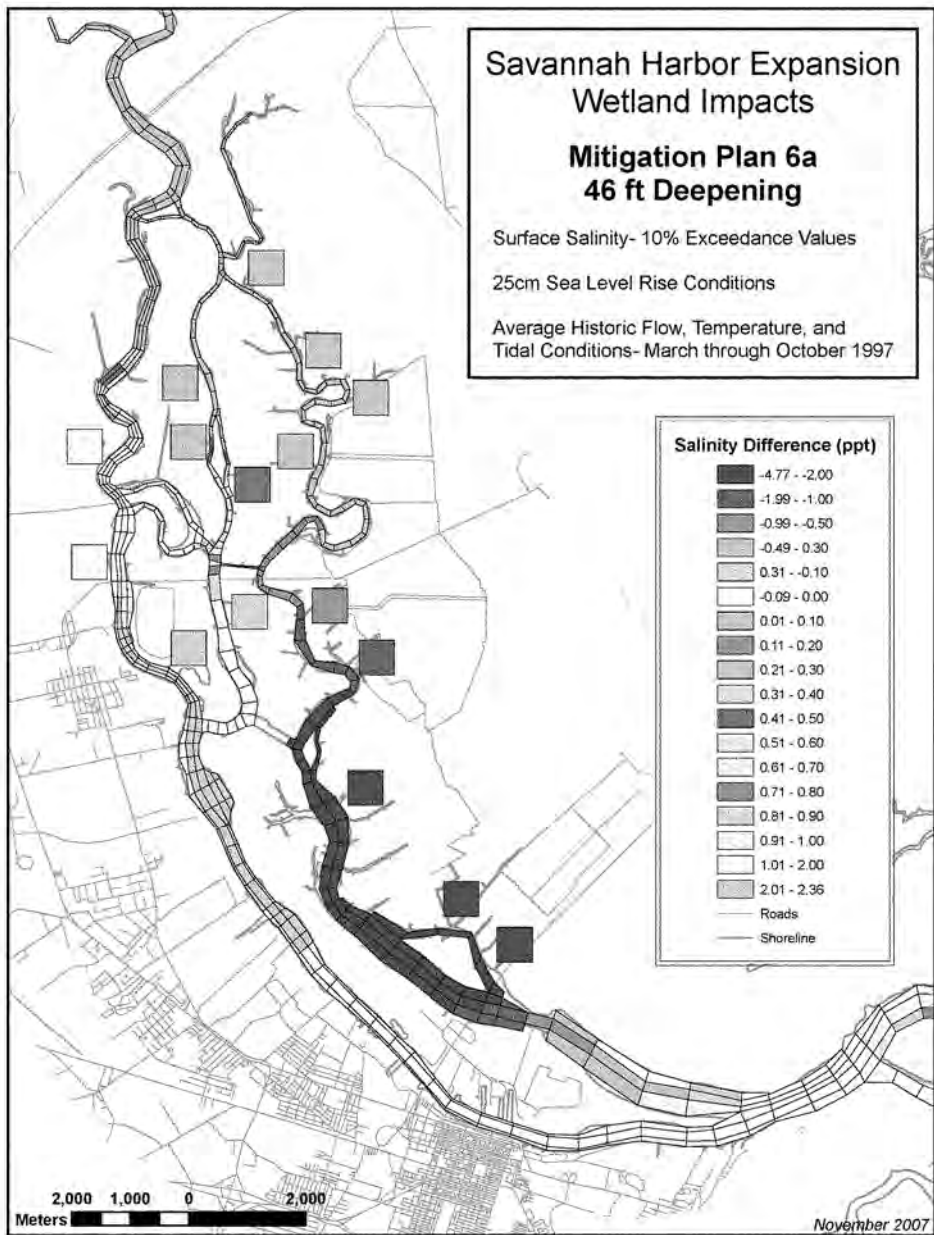


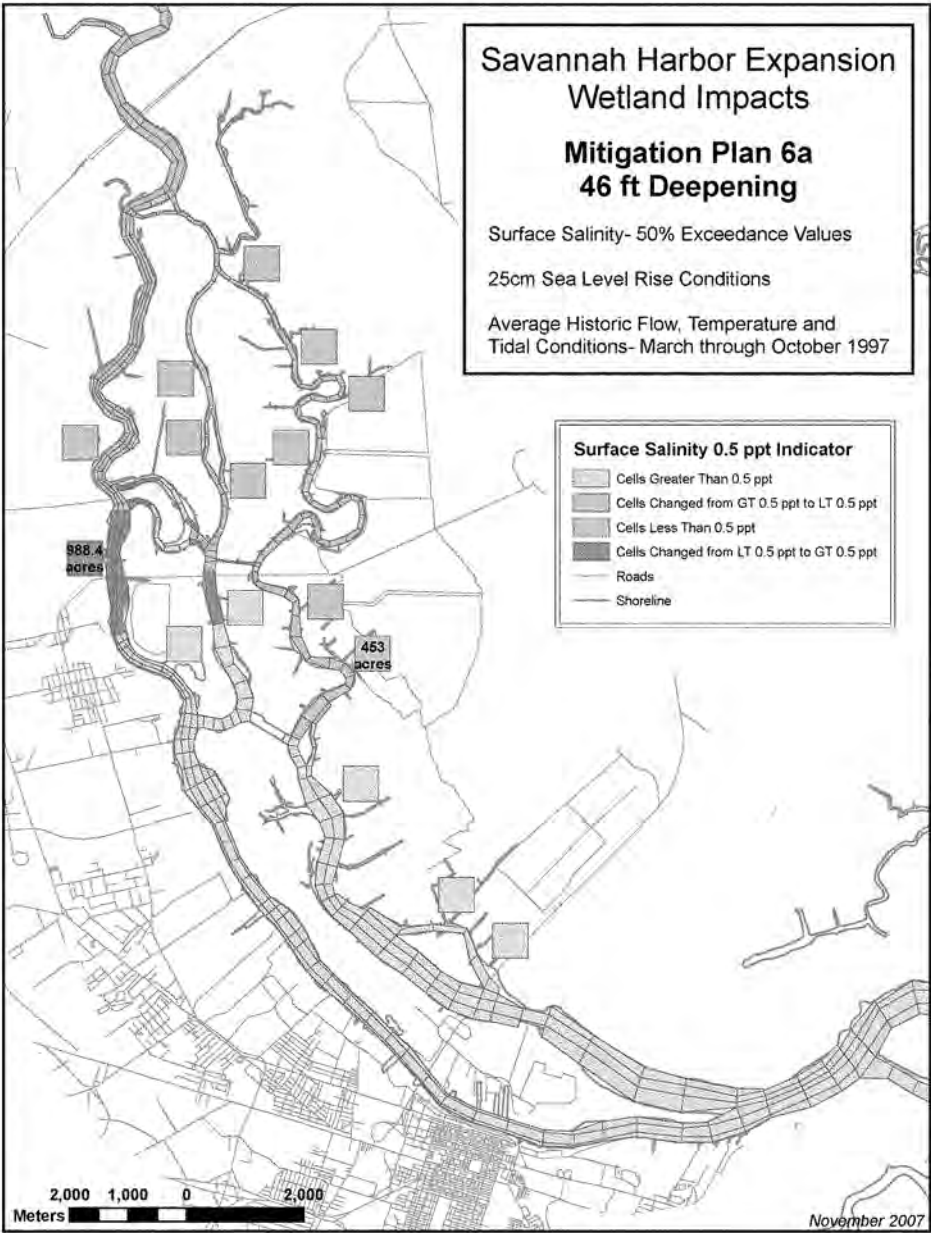


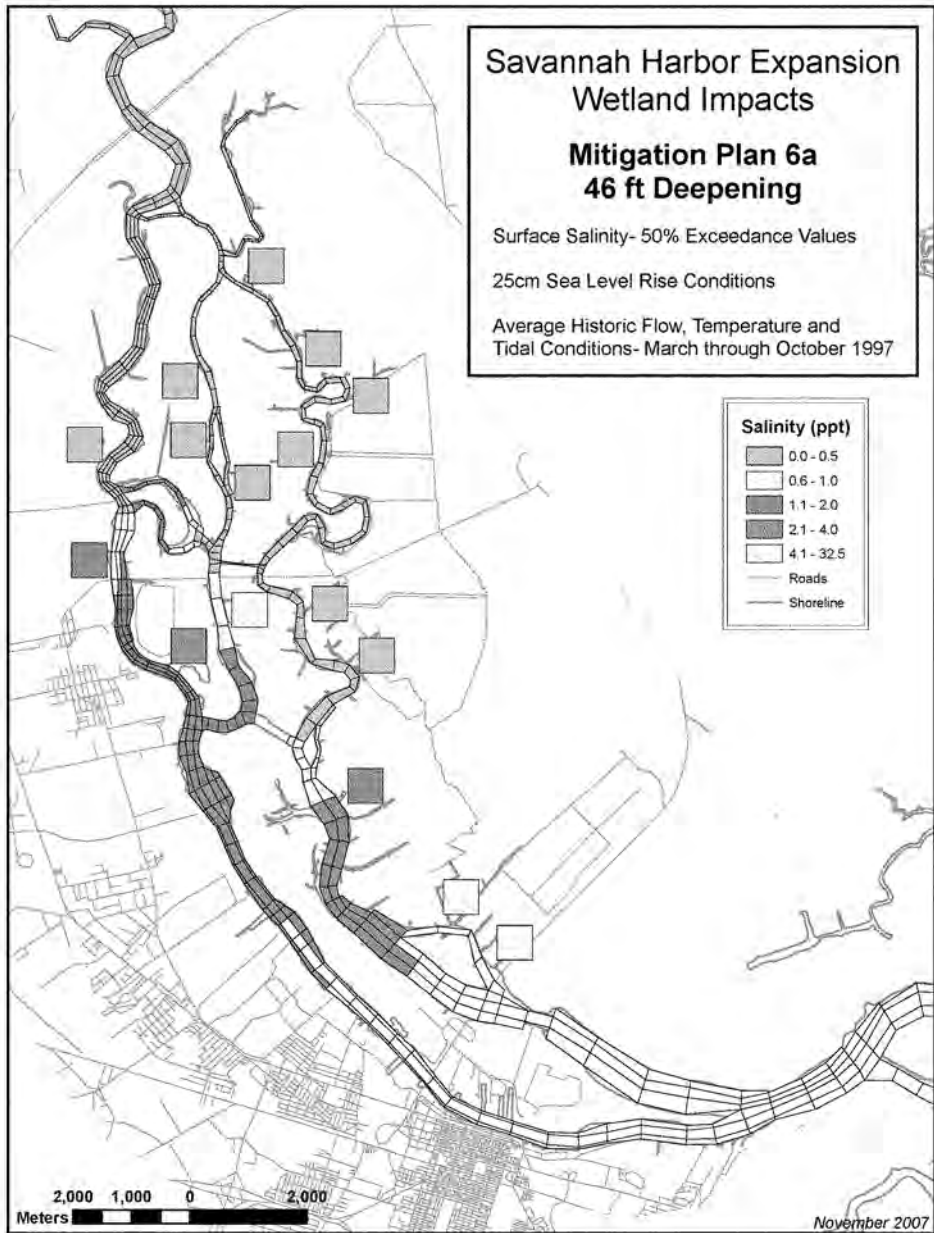
## *Sensitivity Analysis #2A*

1997 (Average) Flow Conditions- 25cm Sea Level Rise

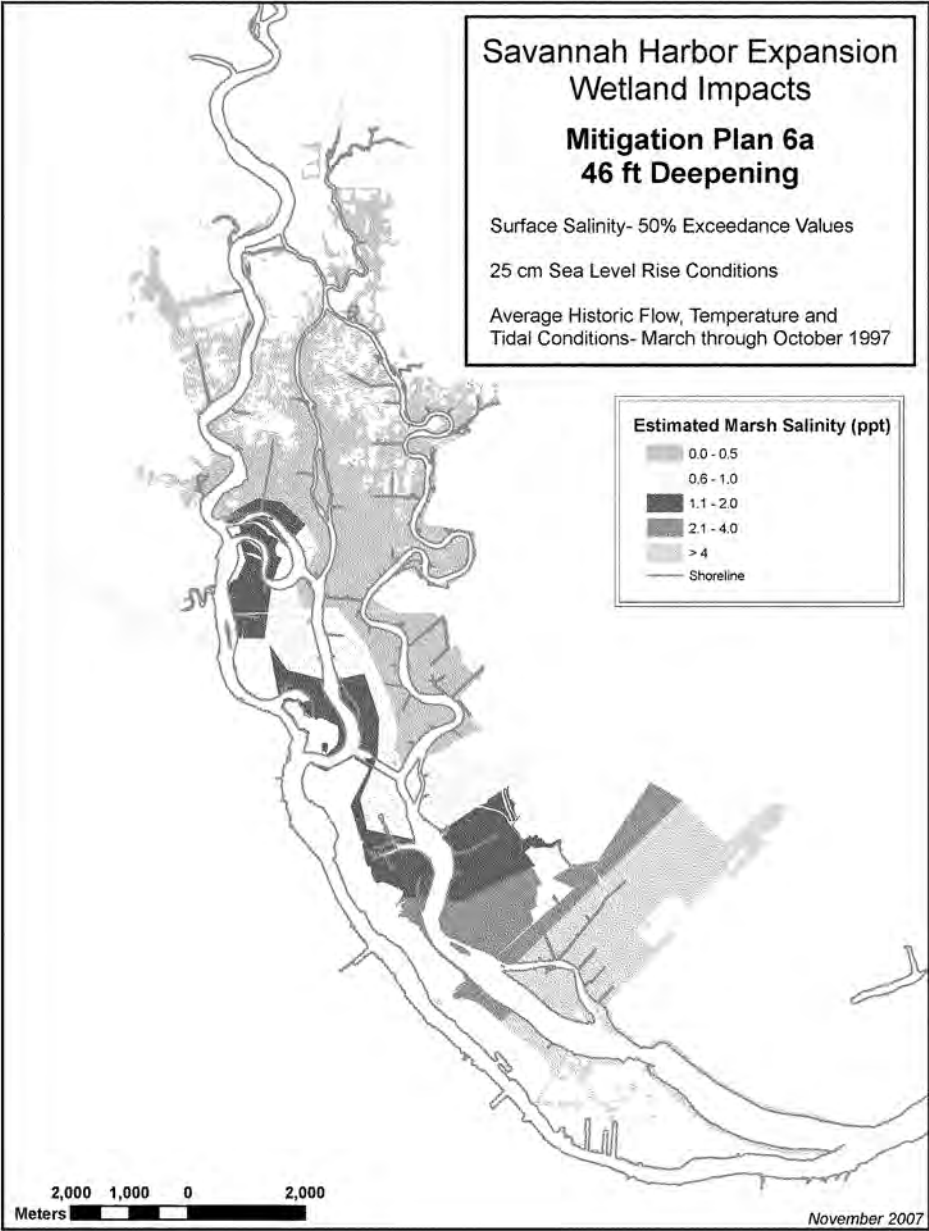






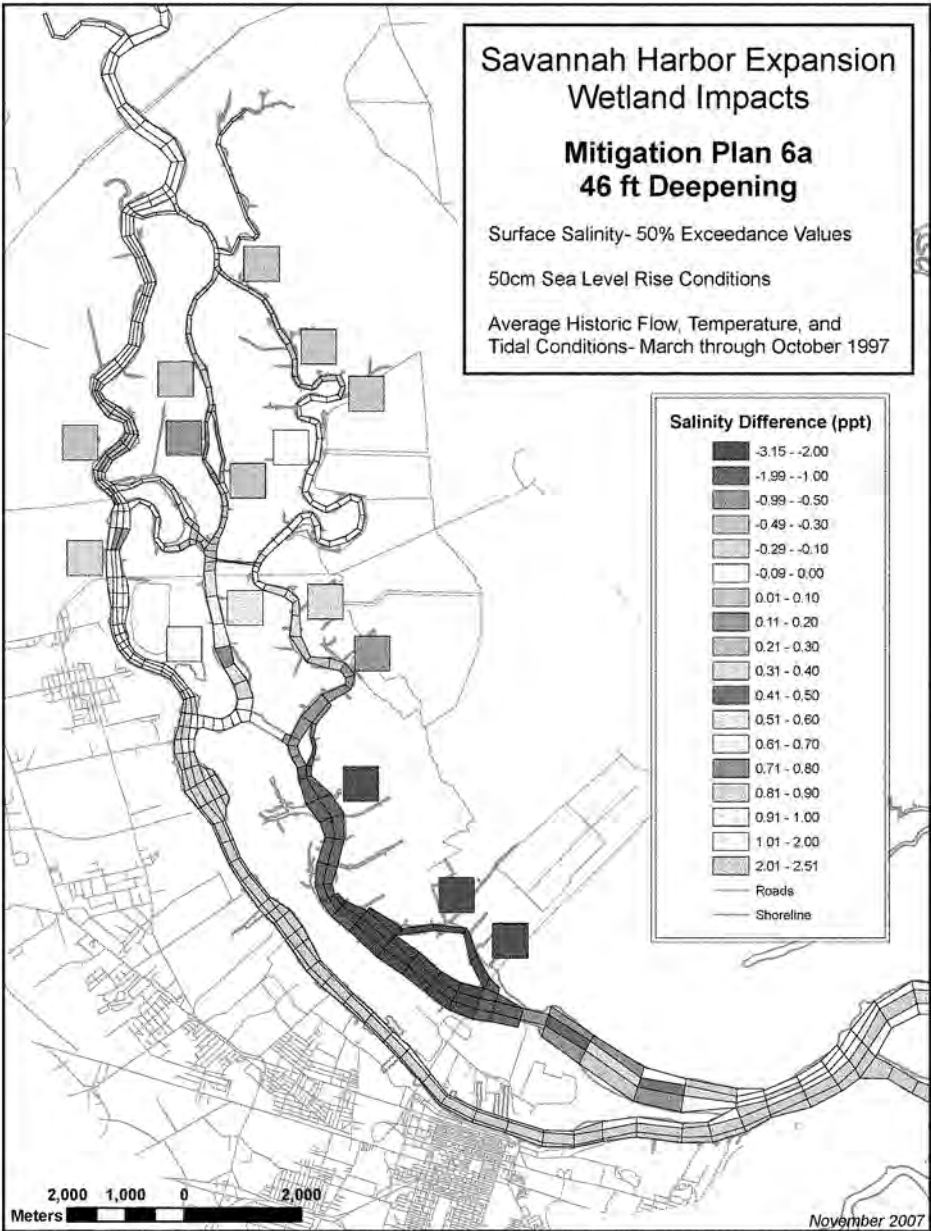


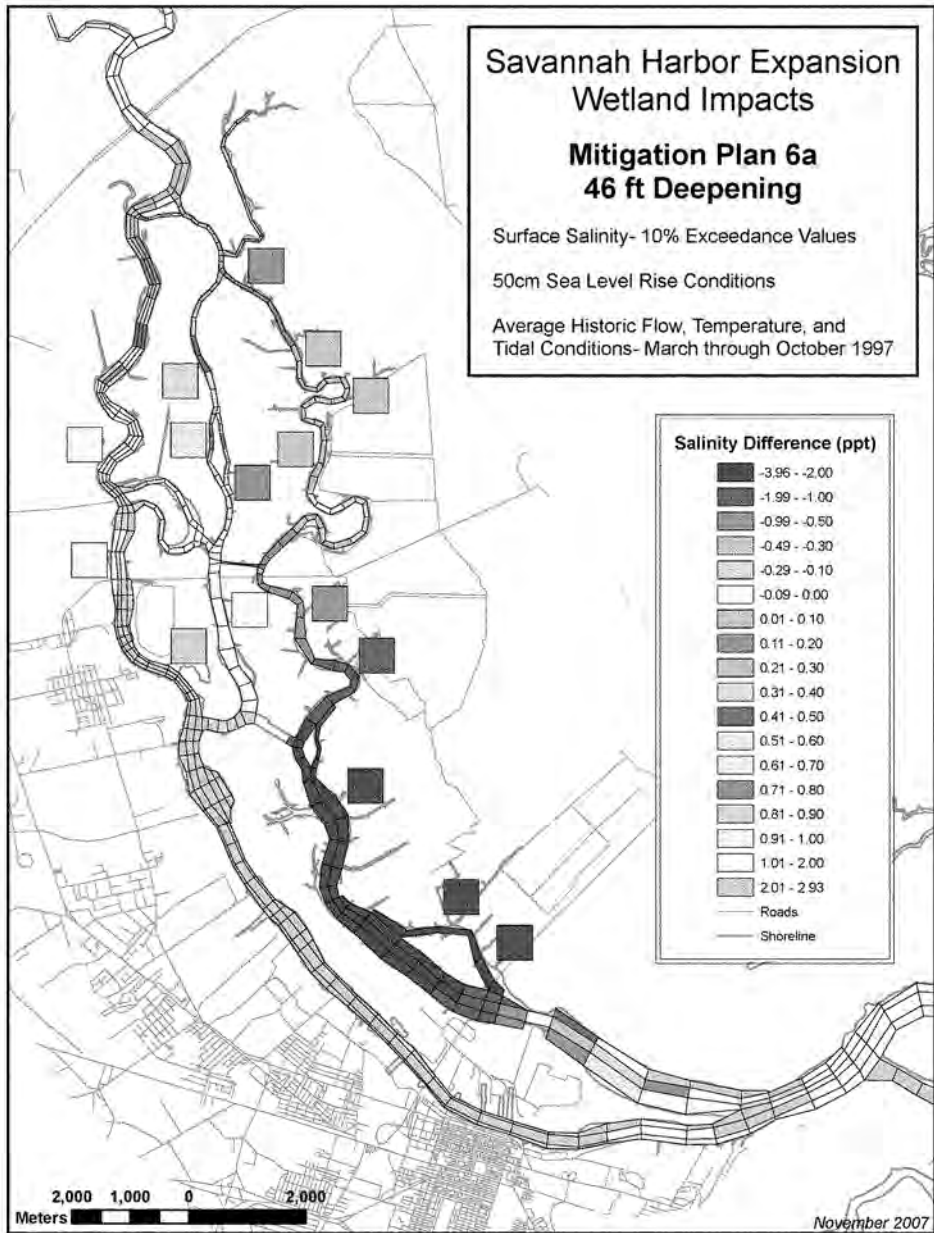


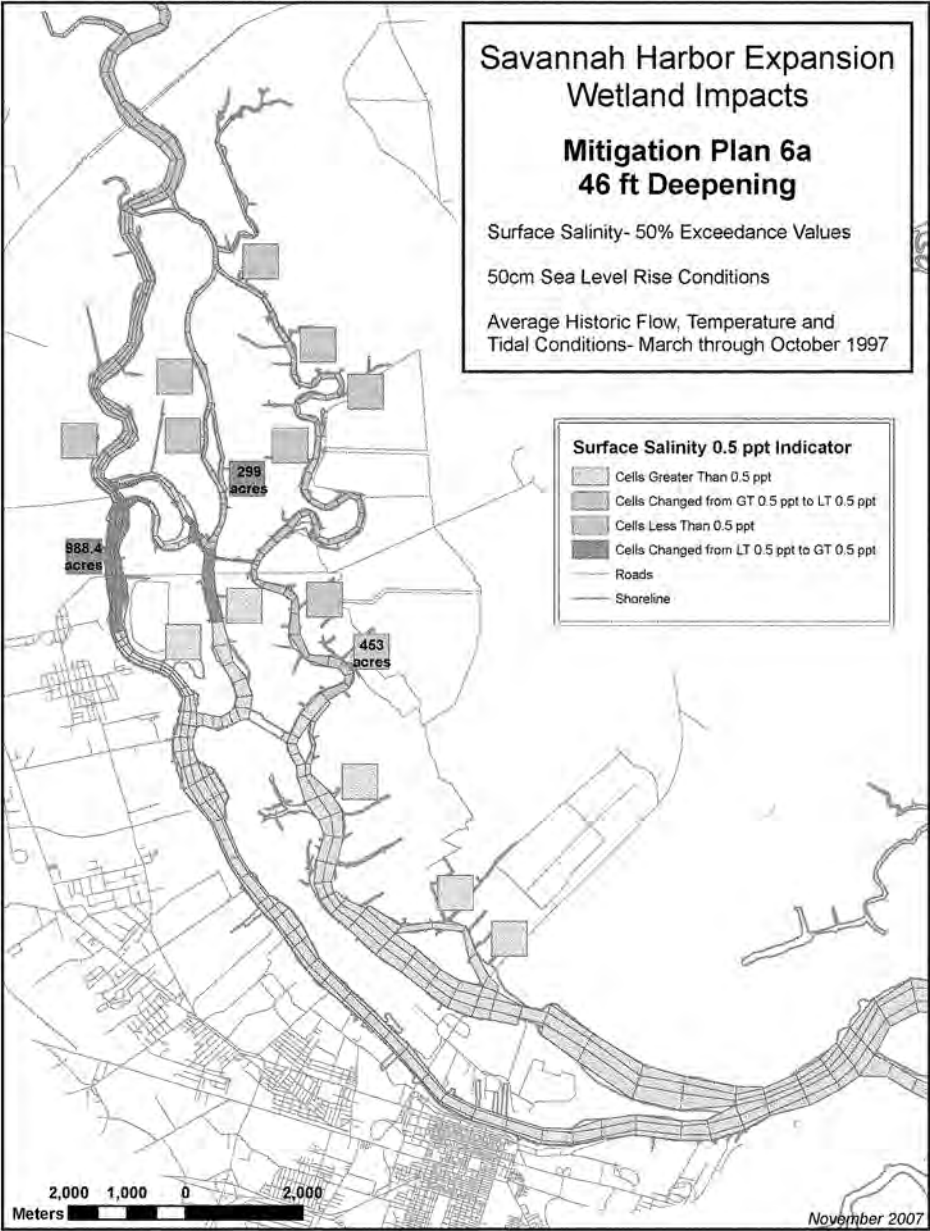


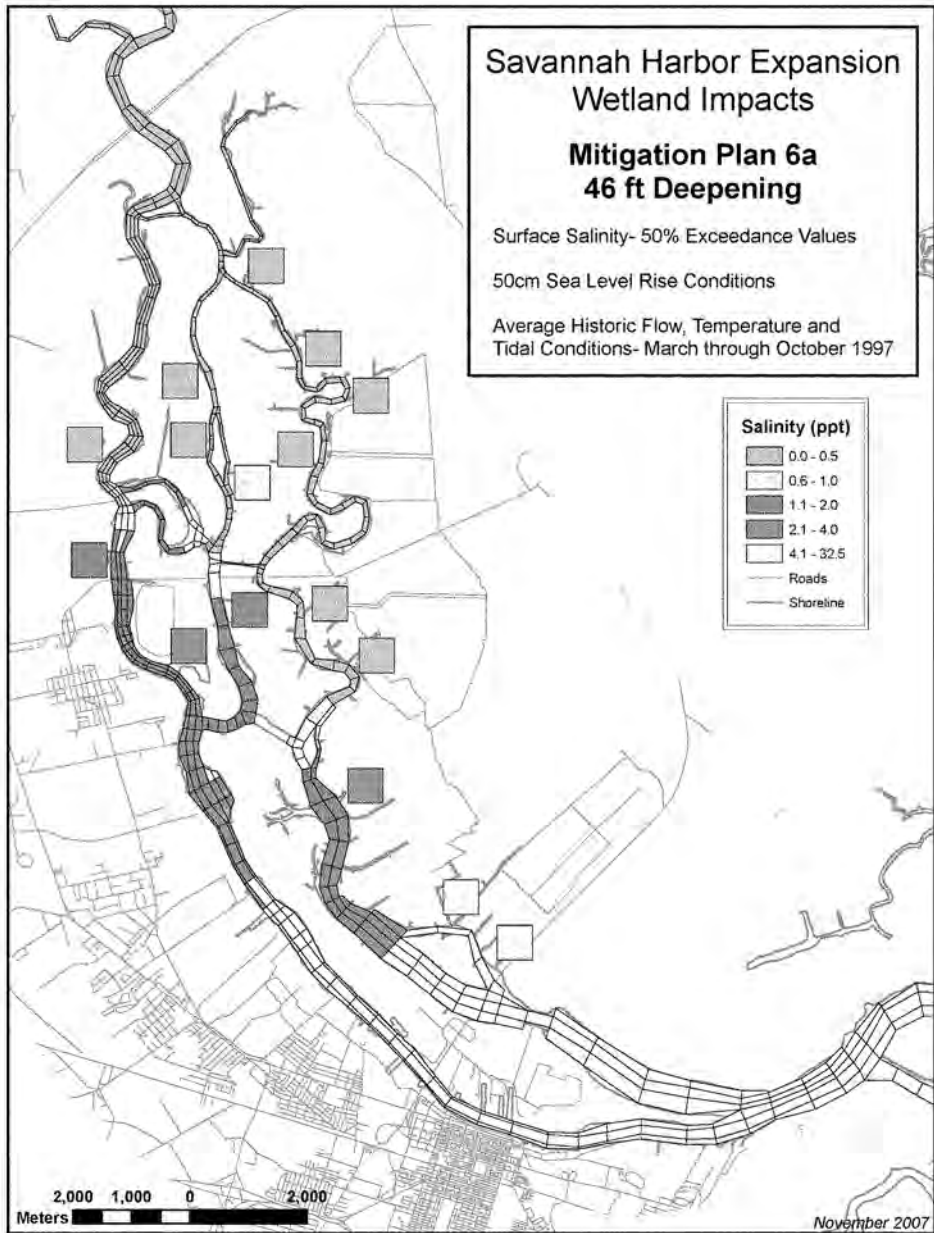
## *Sensitivity Analysis #2B*

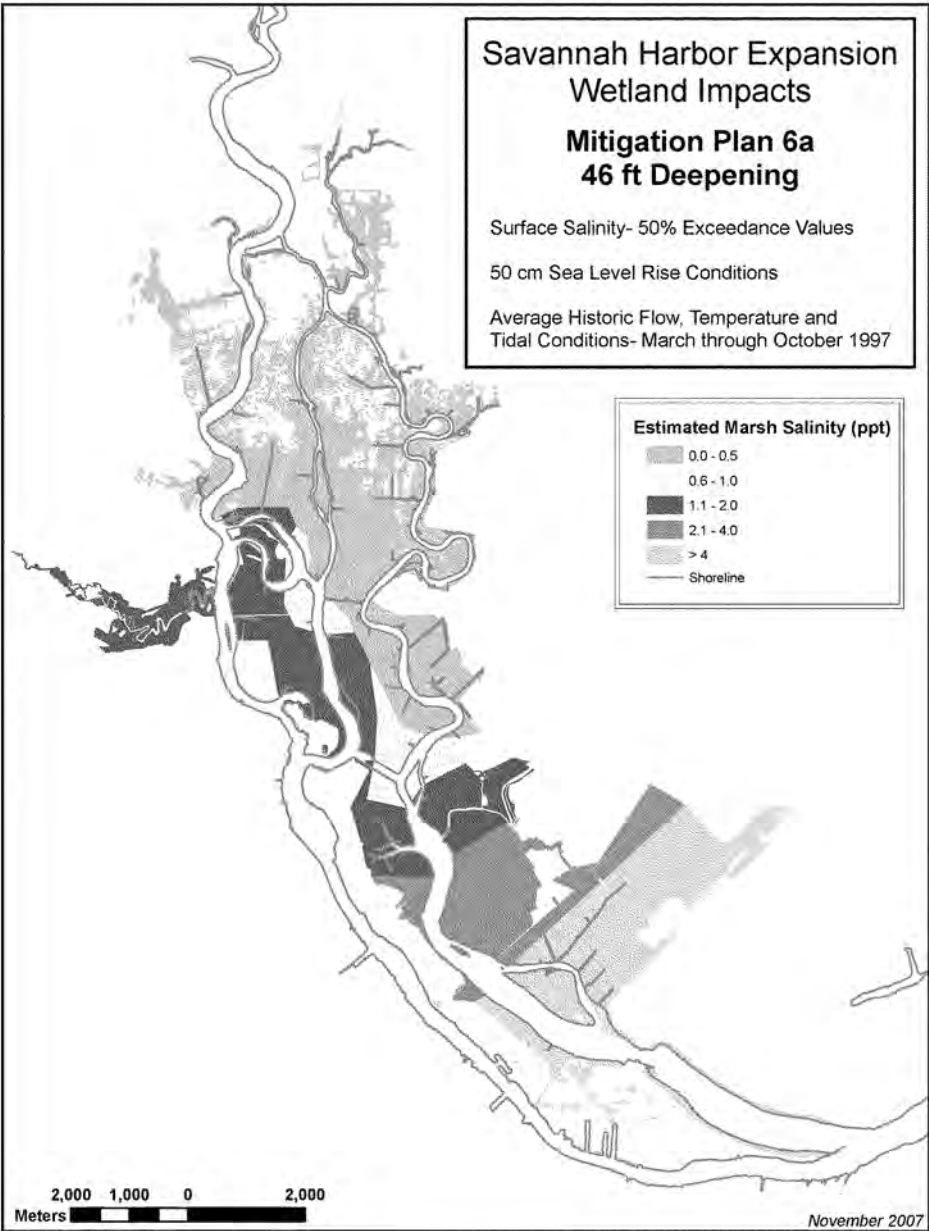
1997 (Average) Flow Conditions- 50cm Sea Level Rise











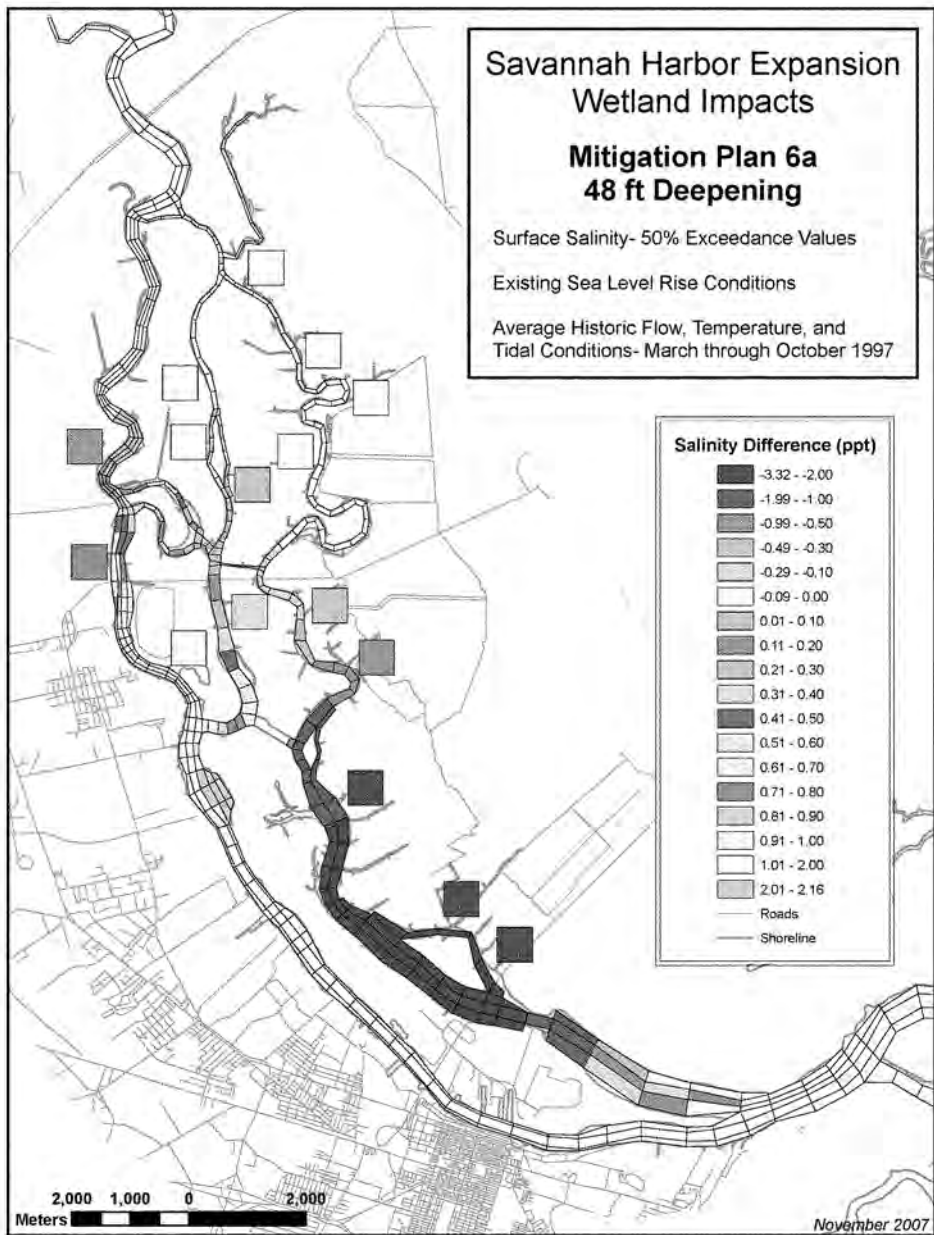
# **48 ft Channel Depth**

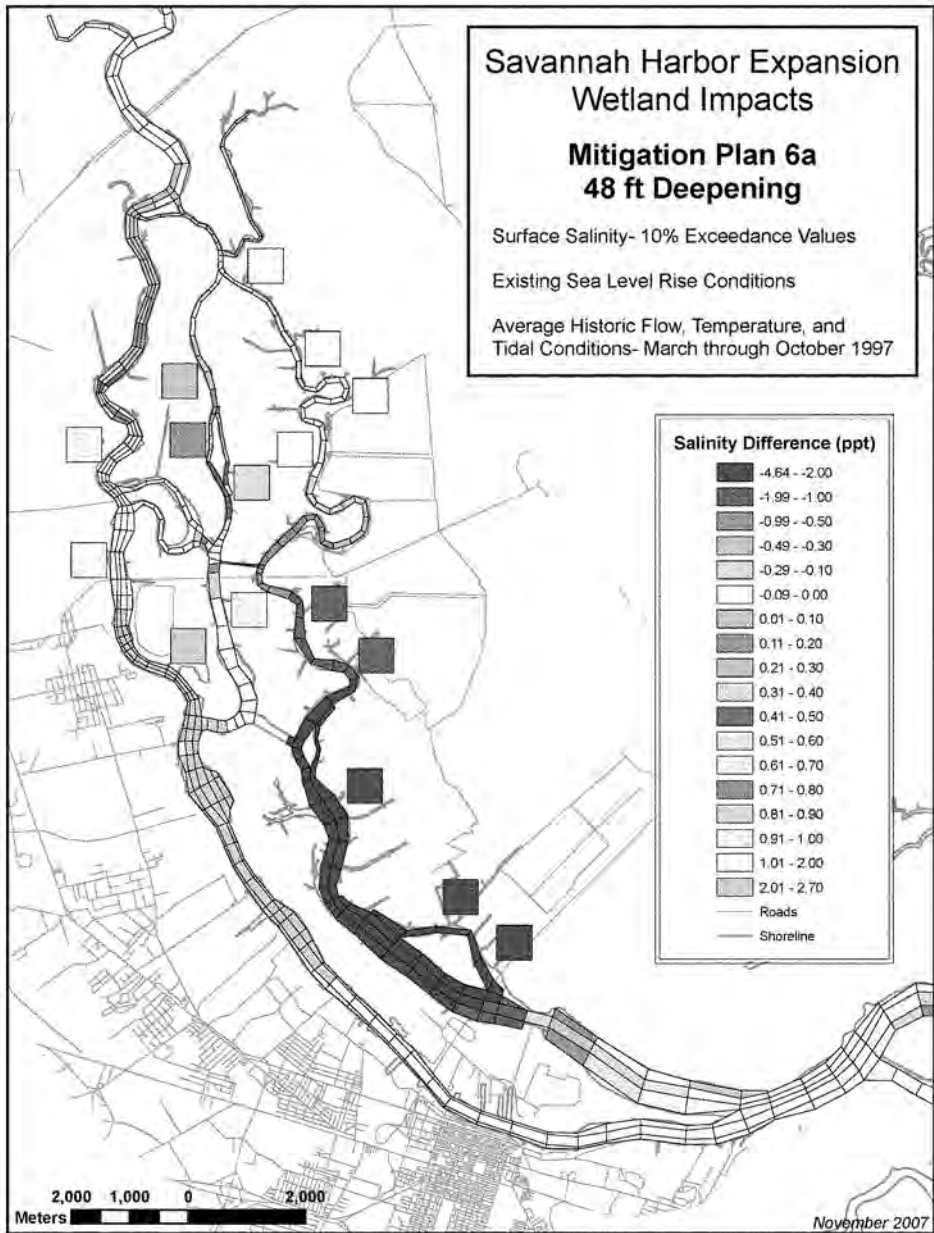
## *Mitigation Plan 6a*

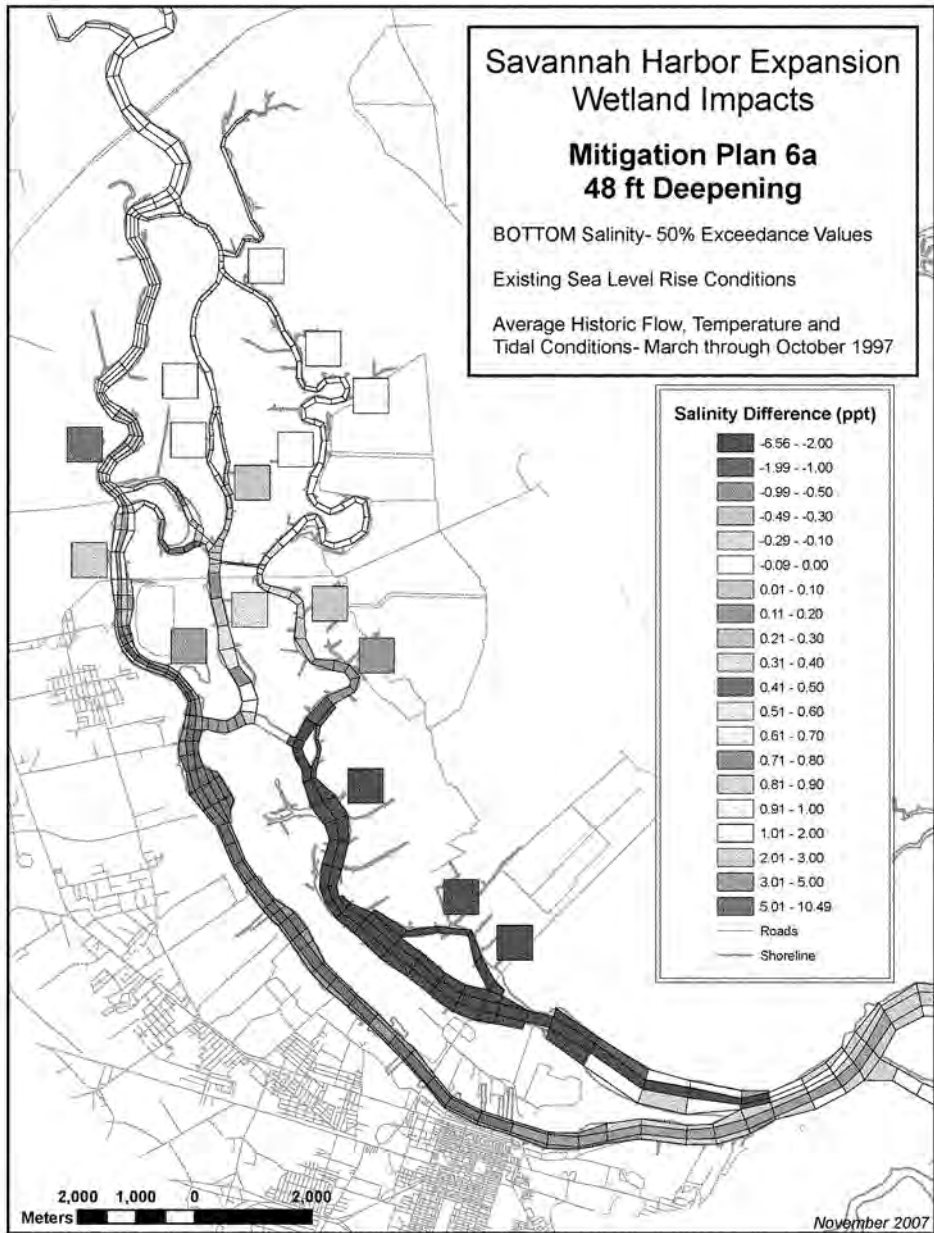


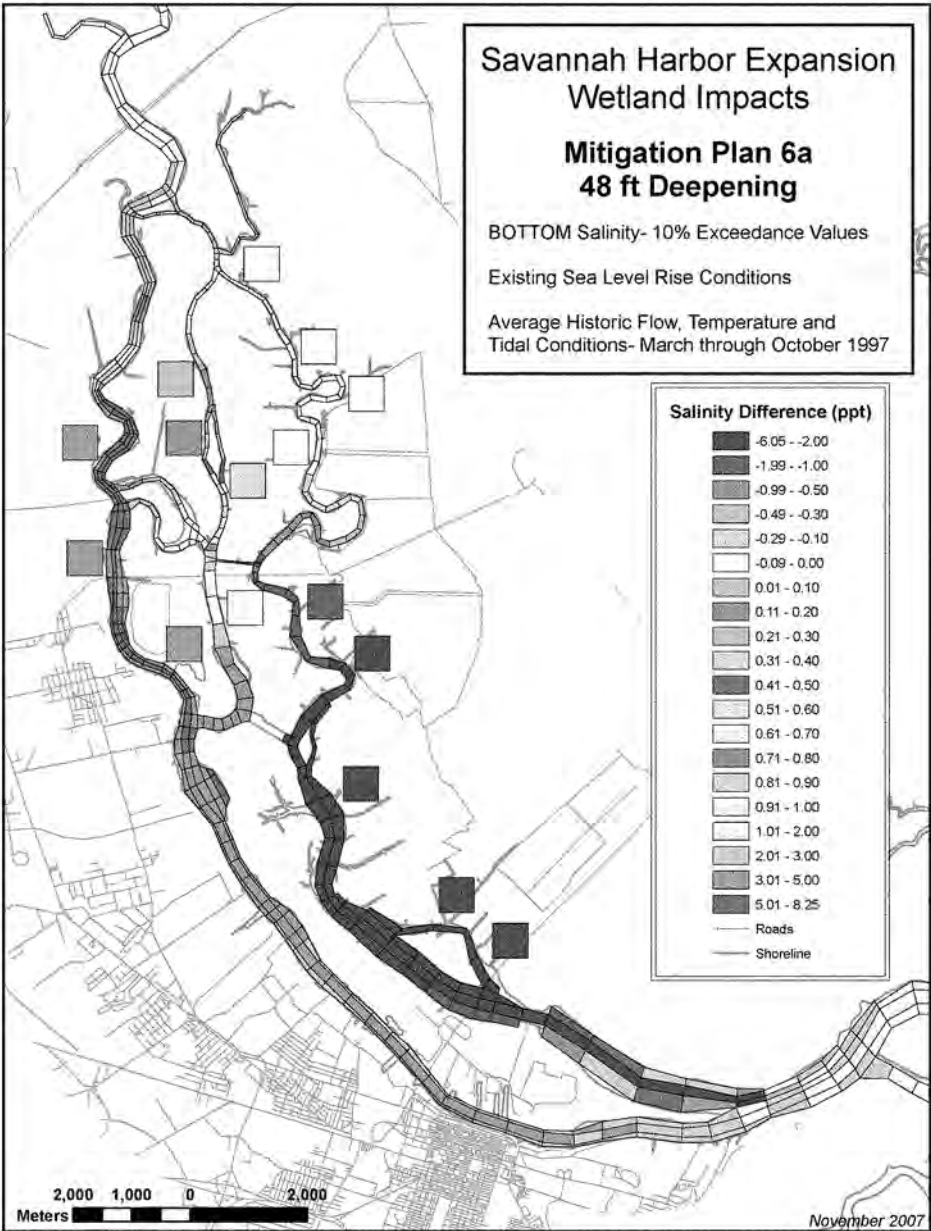
## *Basic Evaluation*

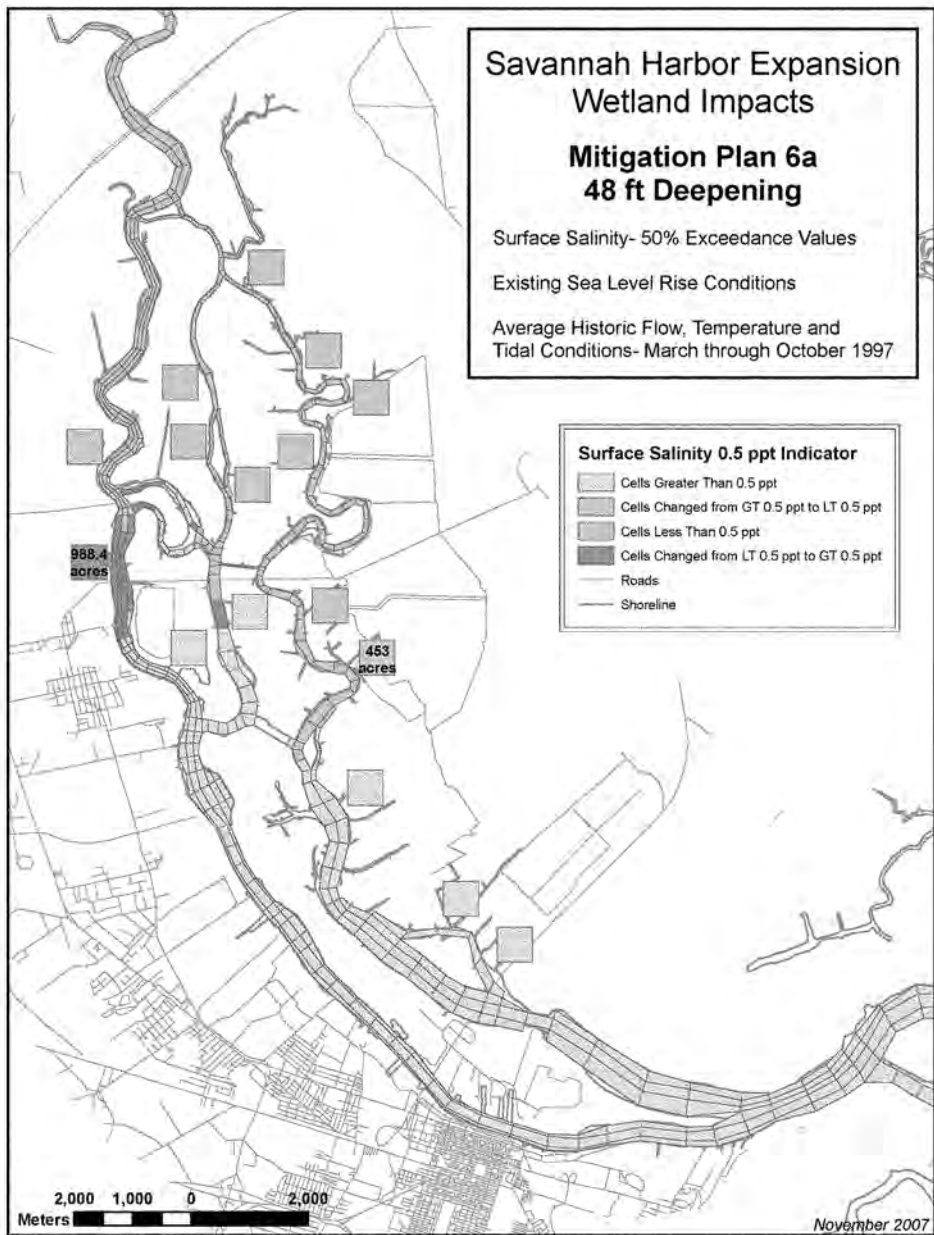
1997 (Average) Flow Conditions- No Sea Level Rise

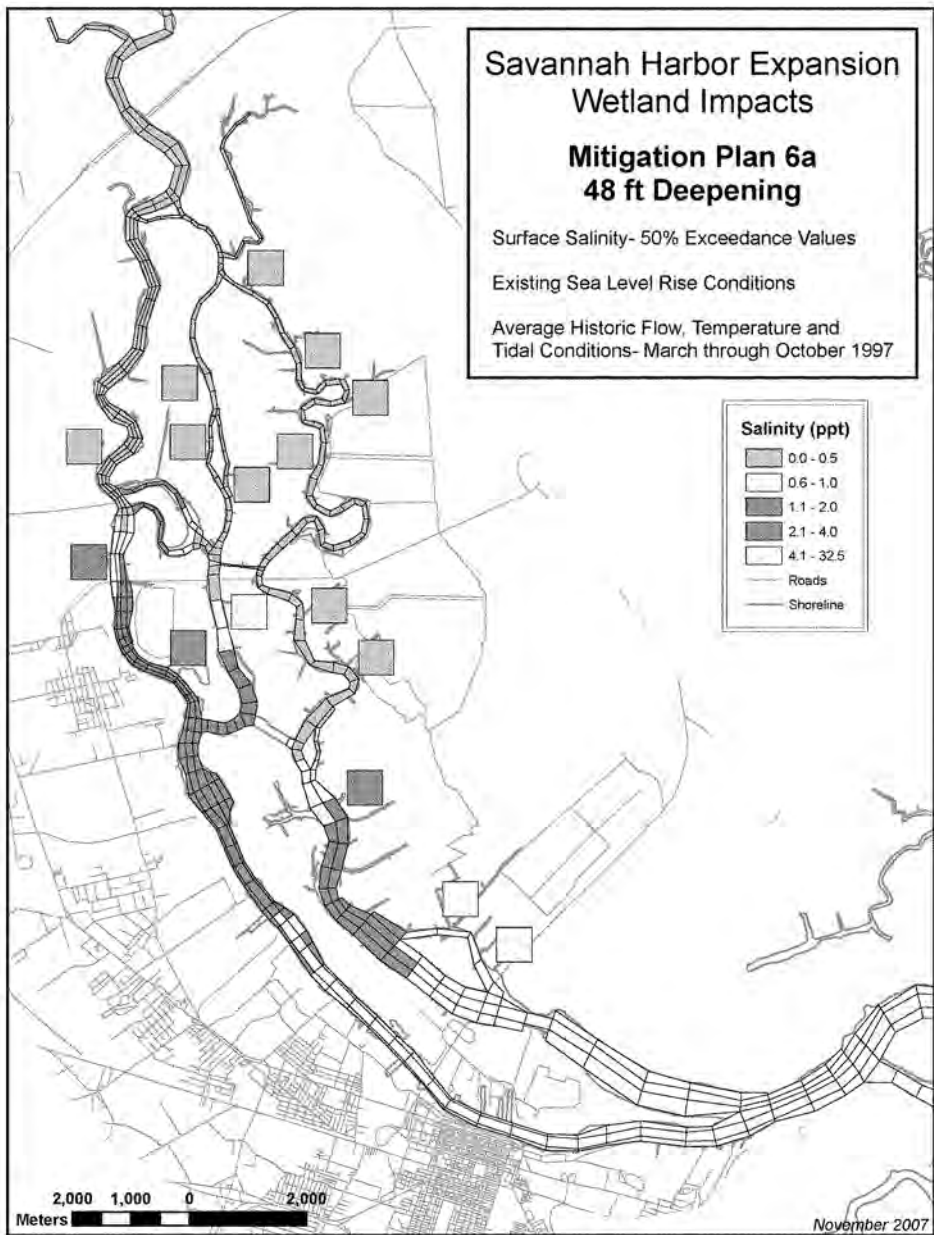


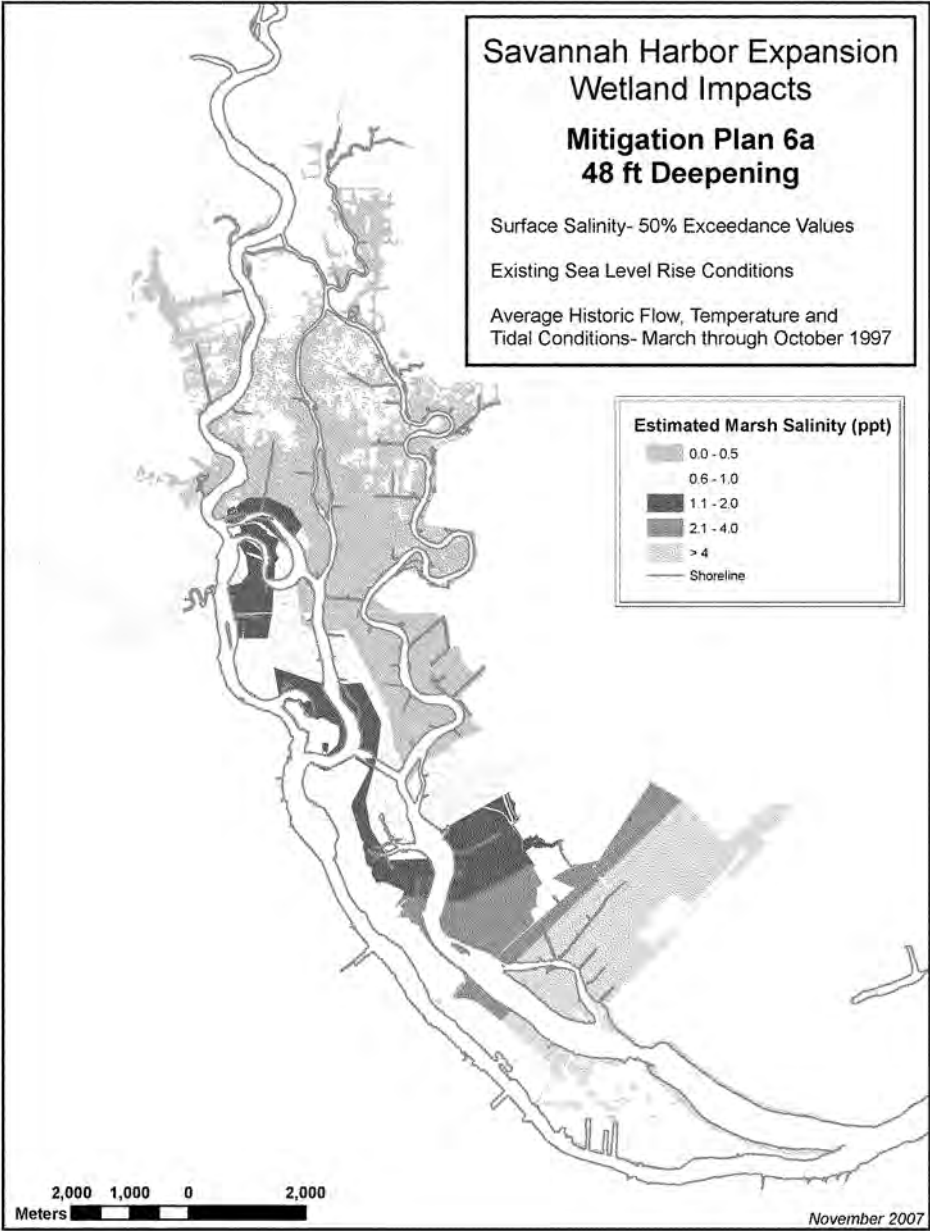








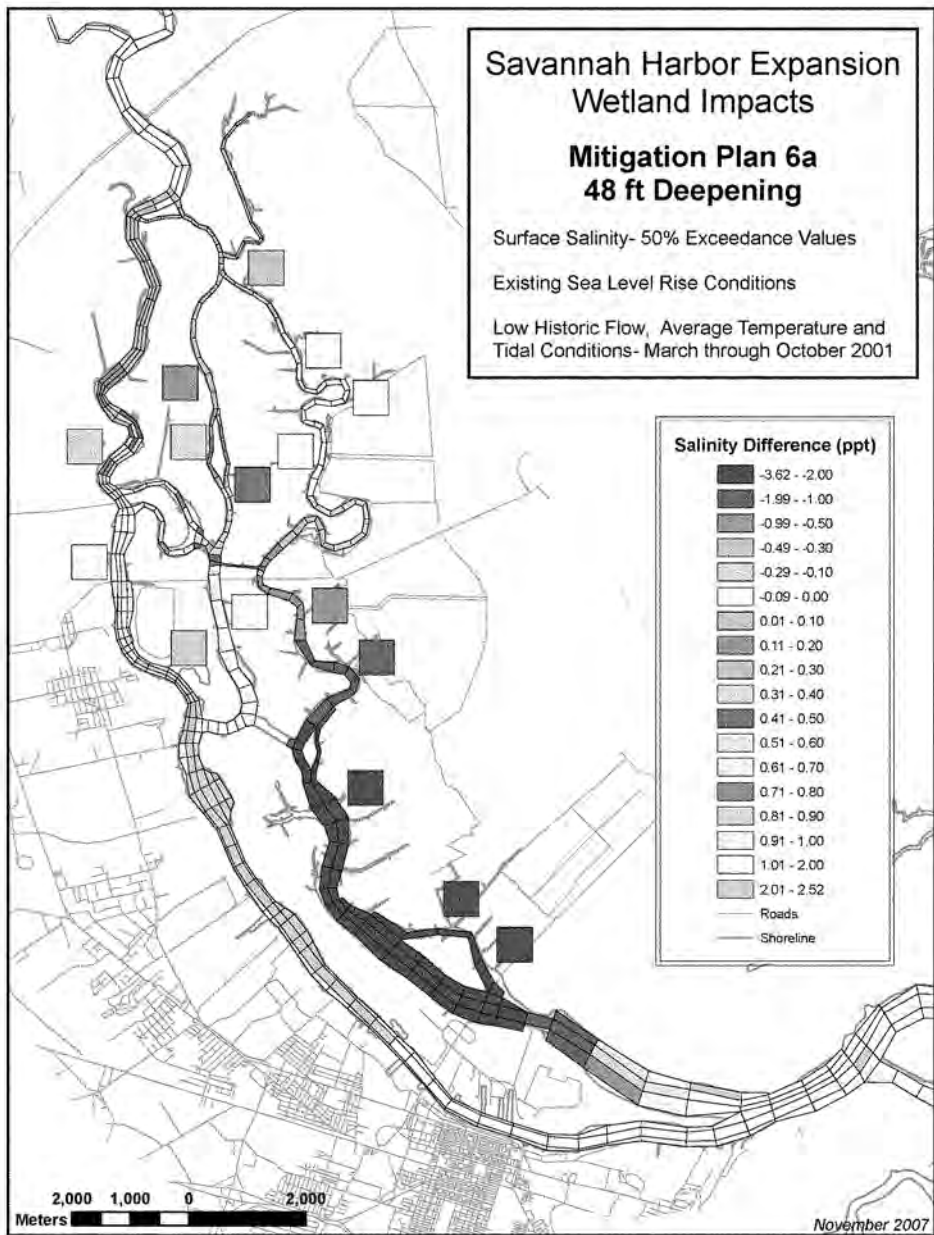


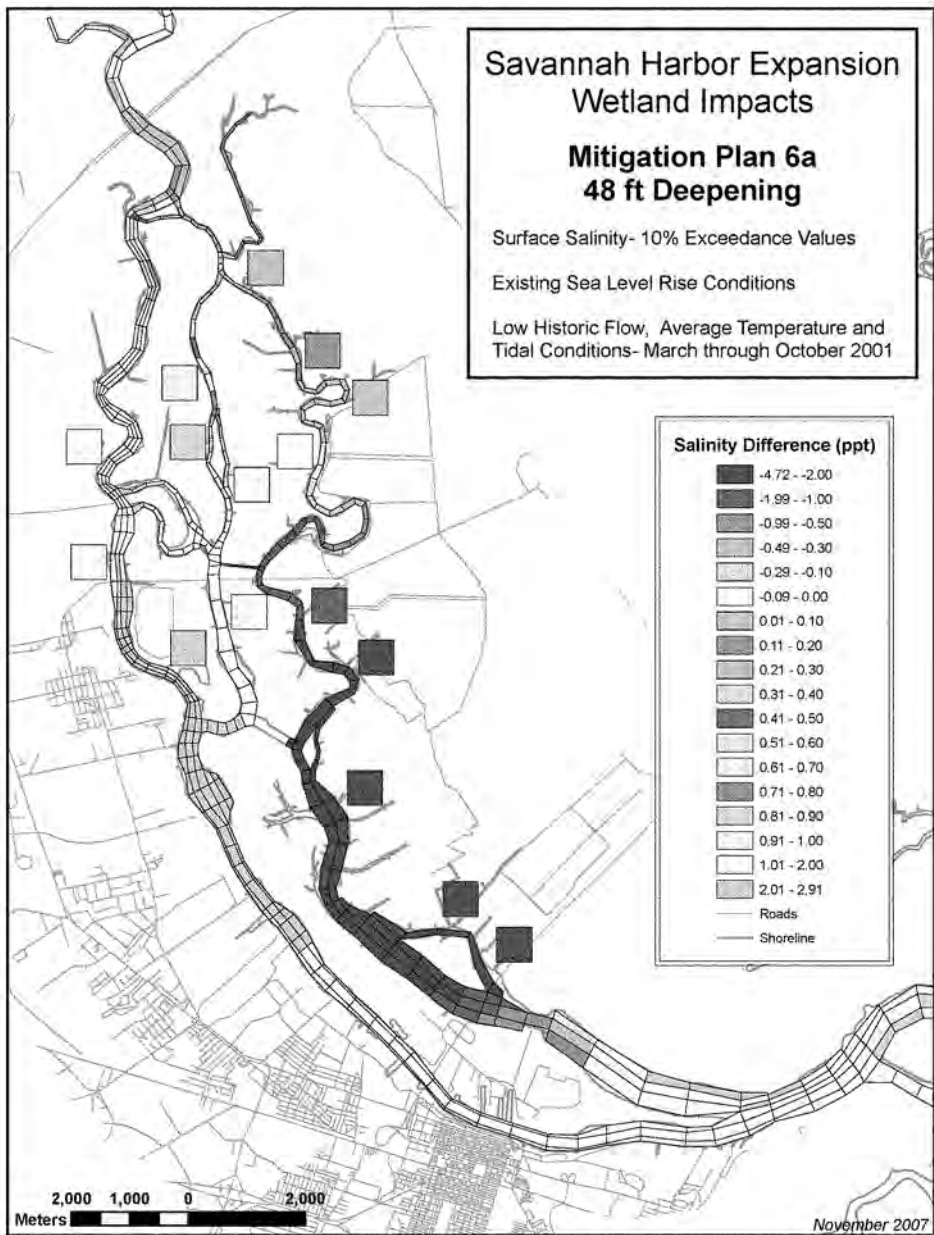


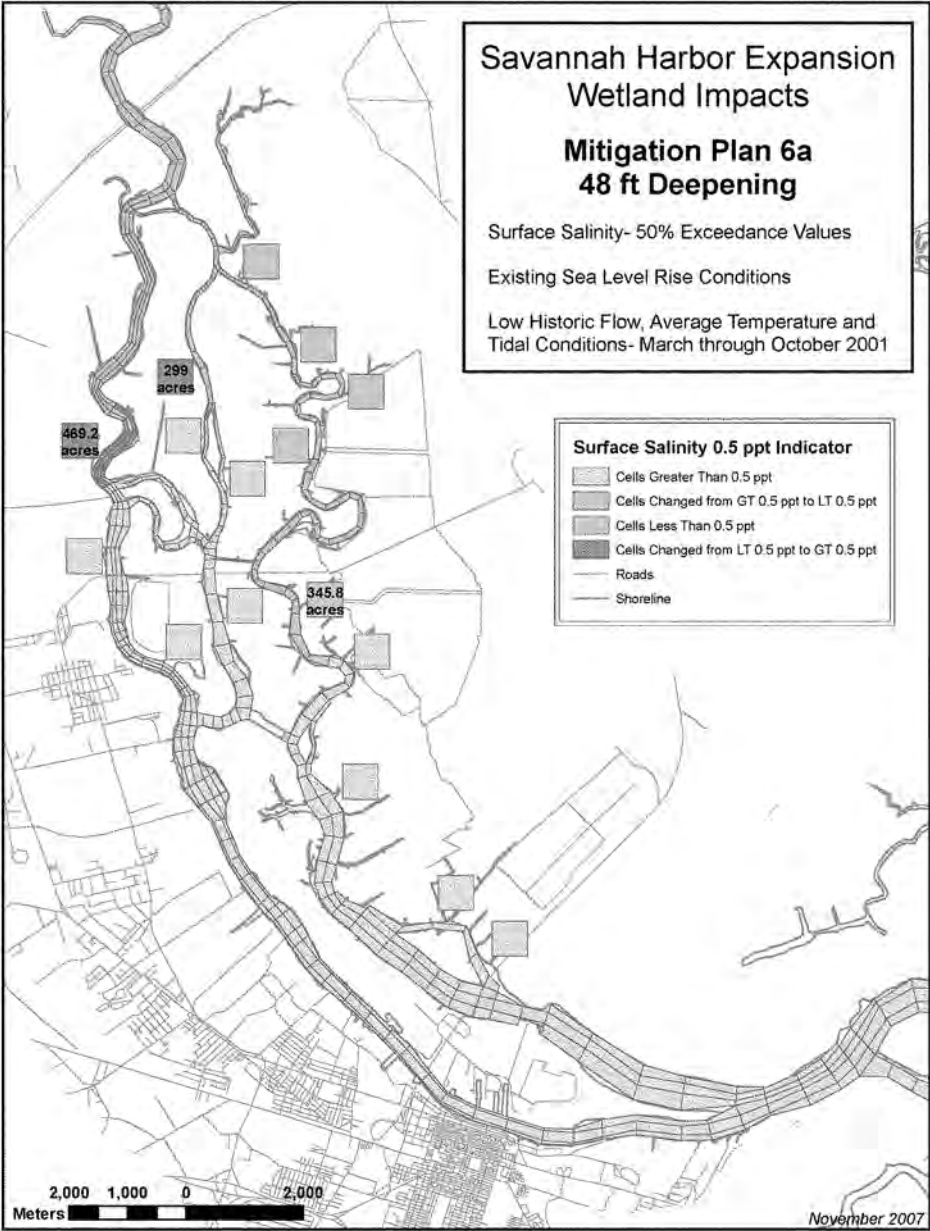


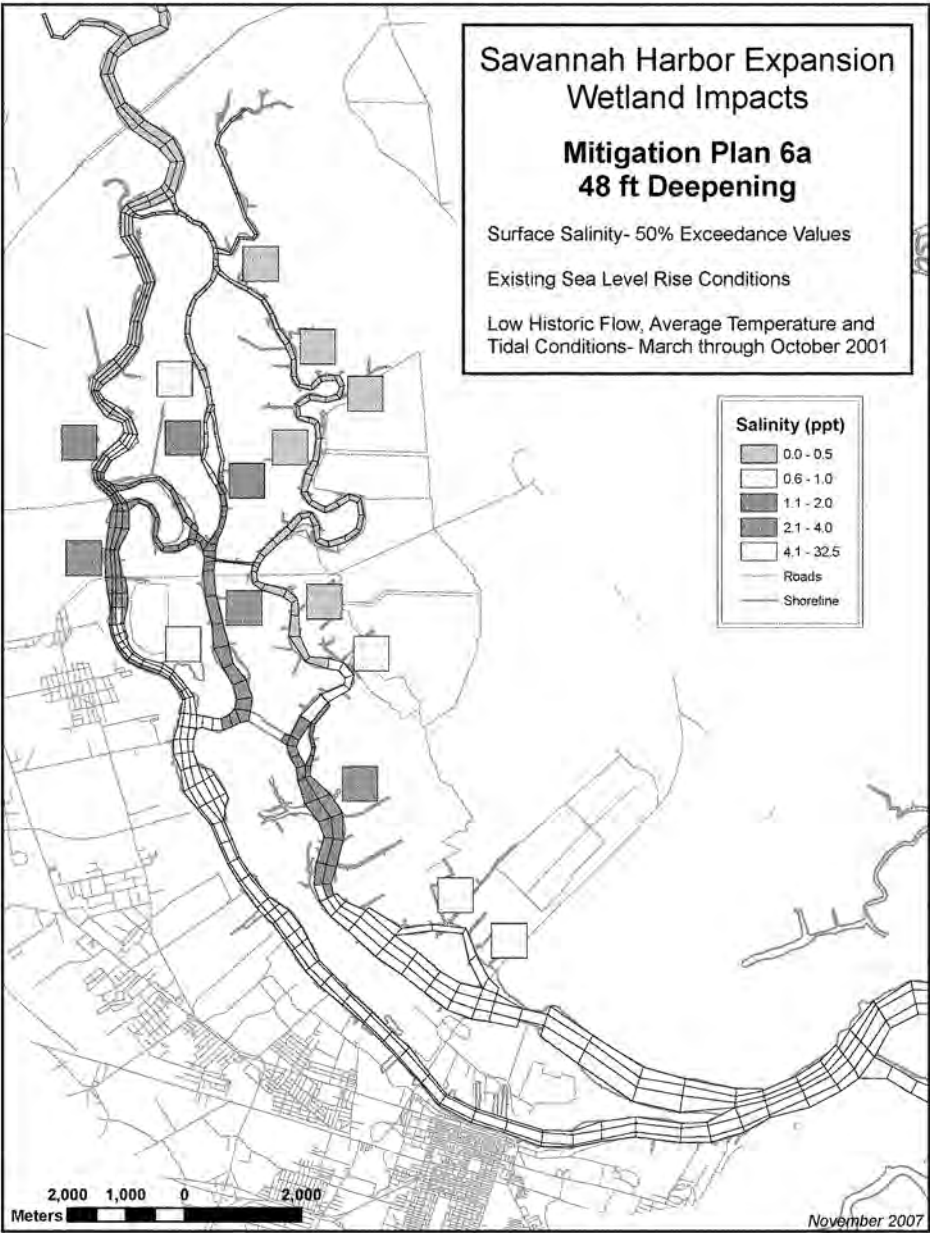
# *Sensitivity Analysis #1*

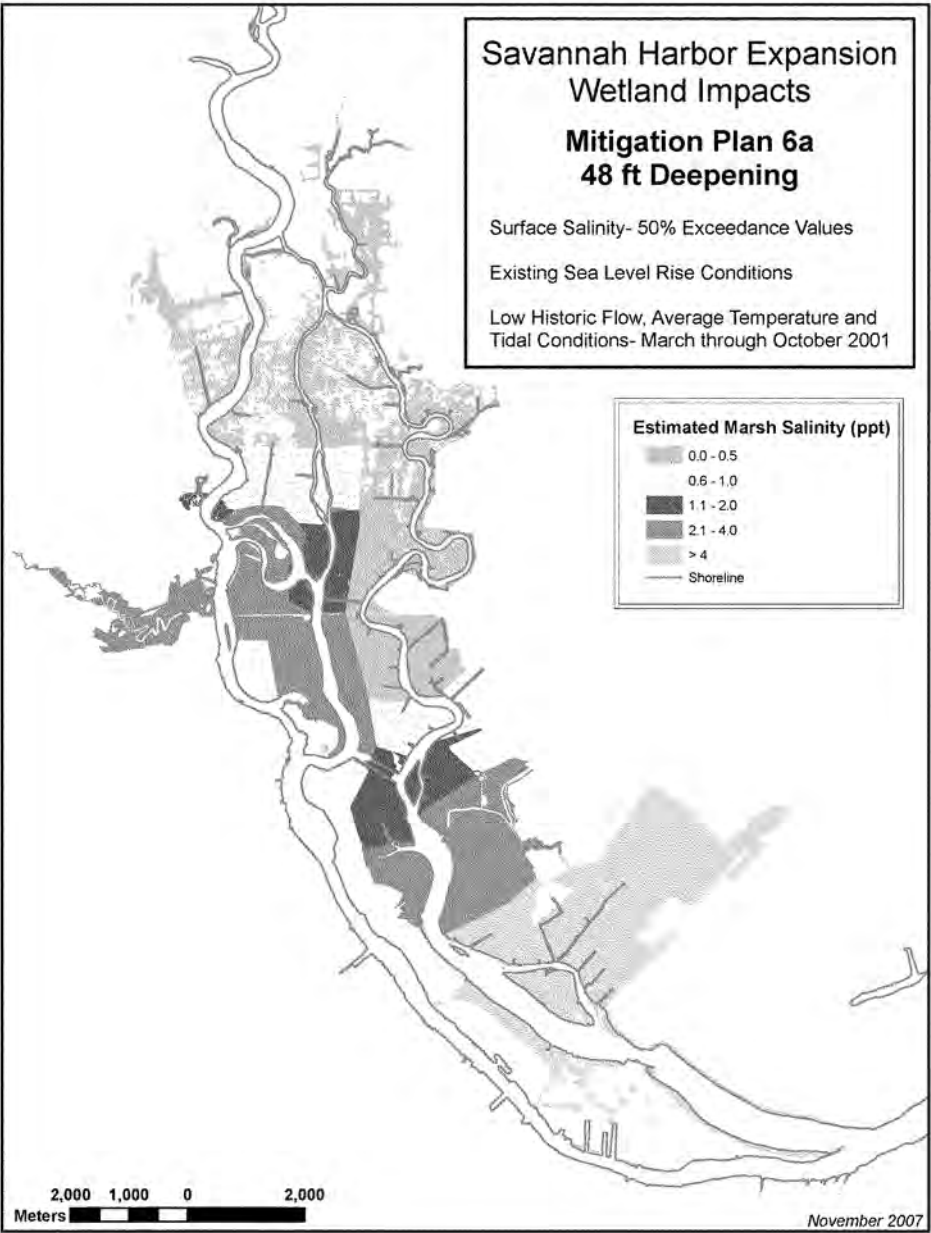
2001 (Low) Flow Conditions- No Sea Level Rise





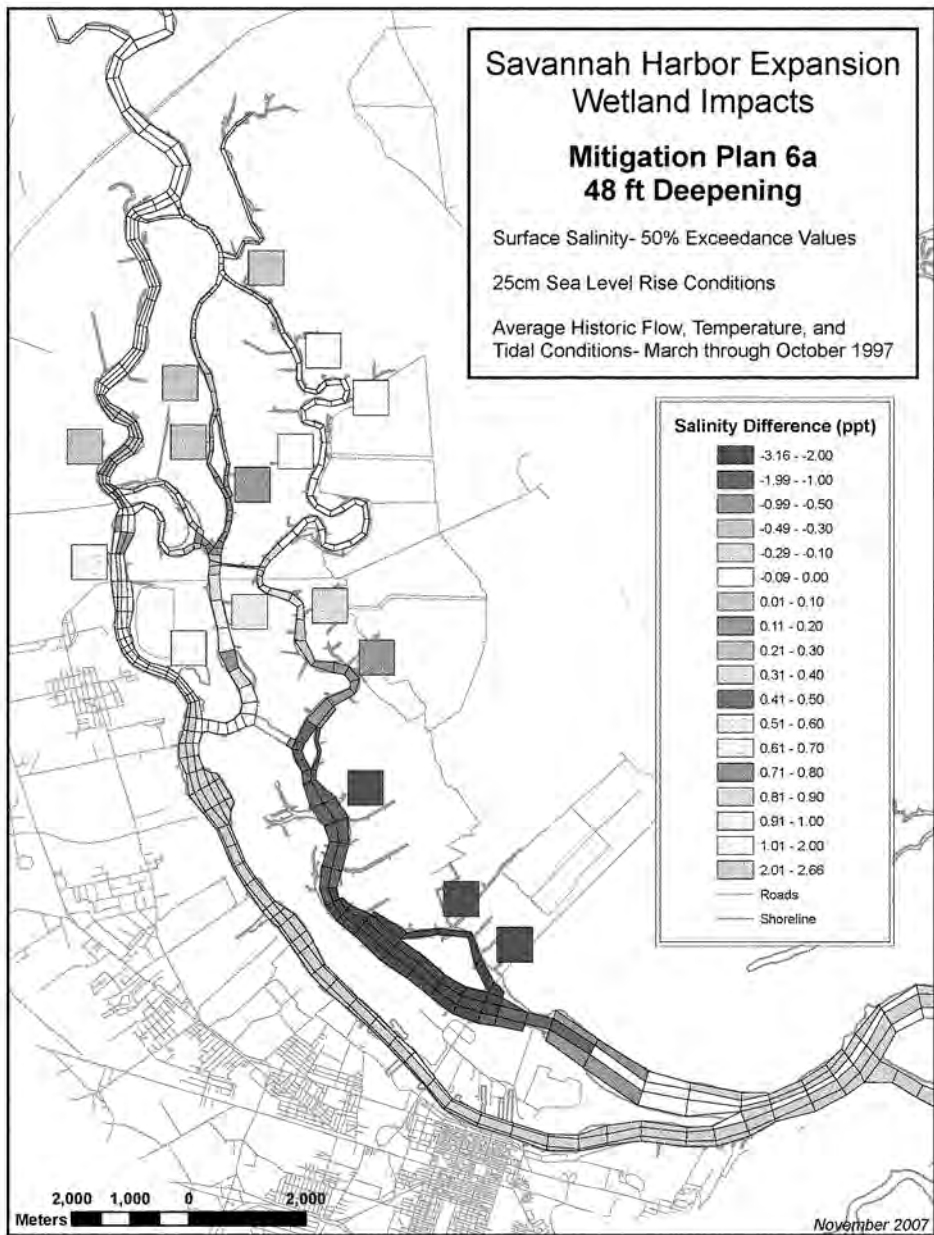




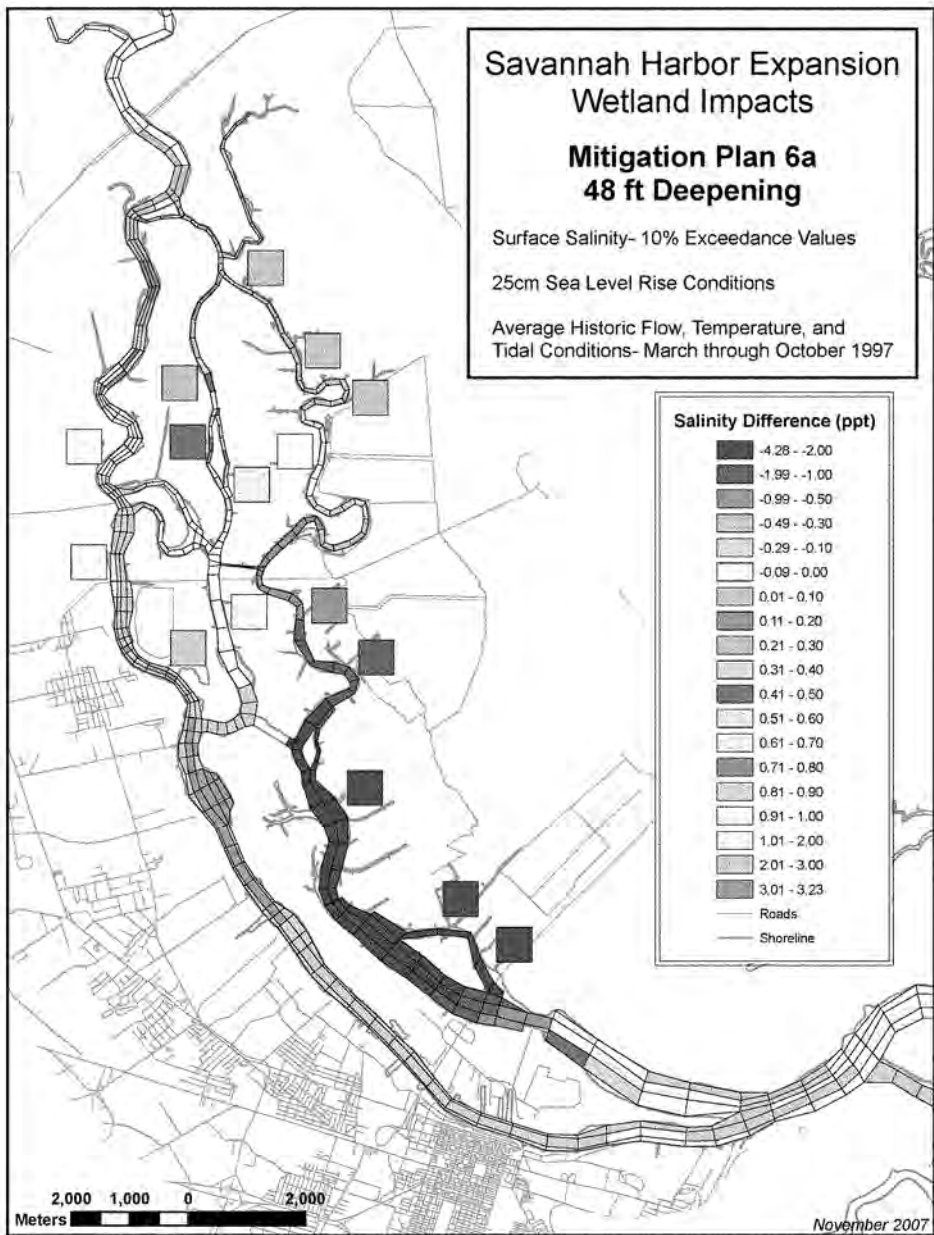


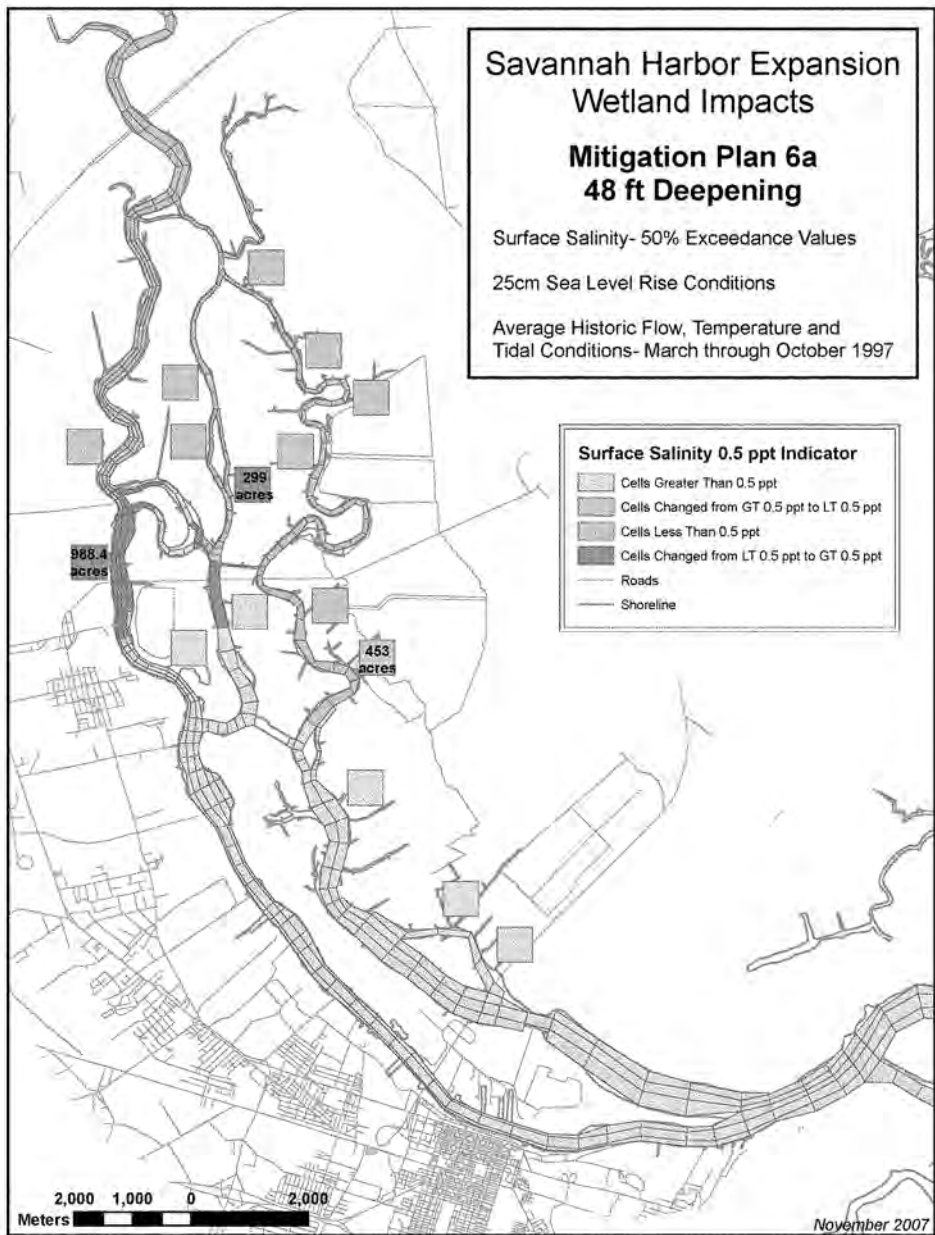
## *Sensitivity Analysis #2A*

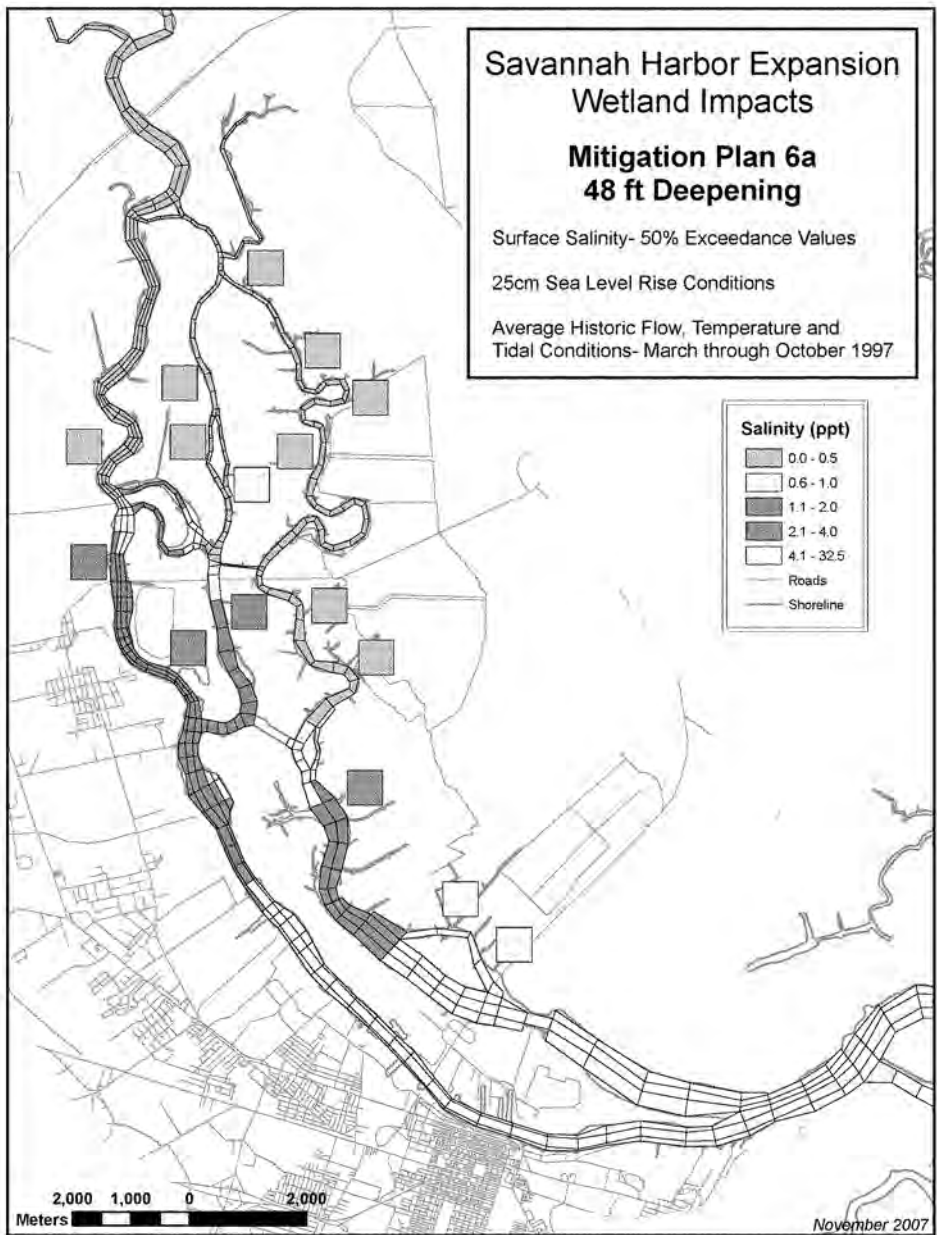
1997 (Average) Flow Conditions- 25cm Sea Level Rise

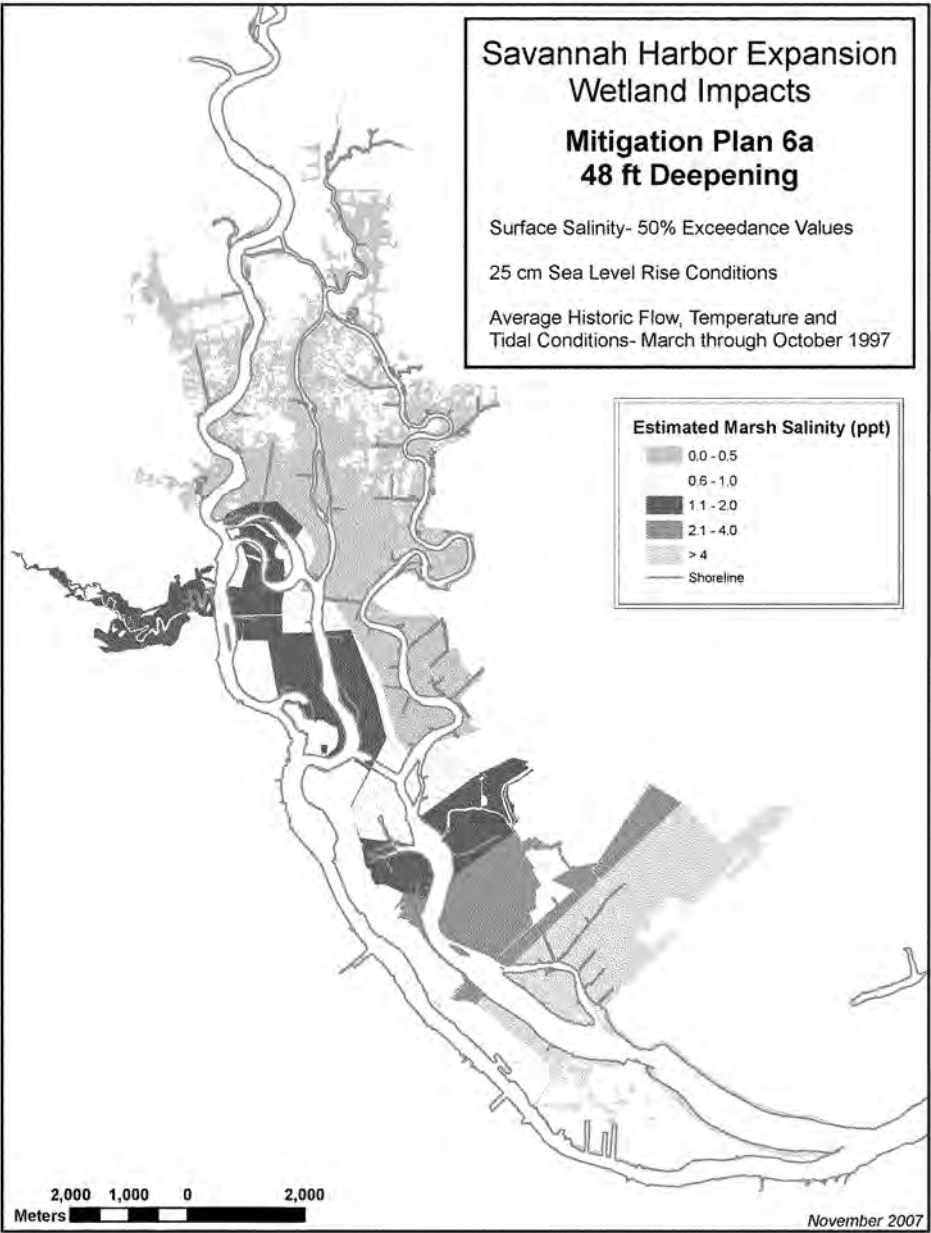






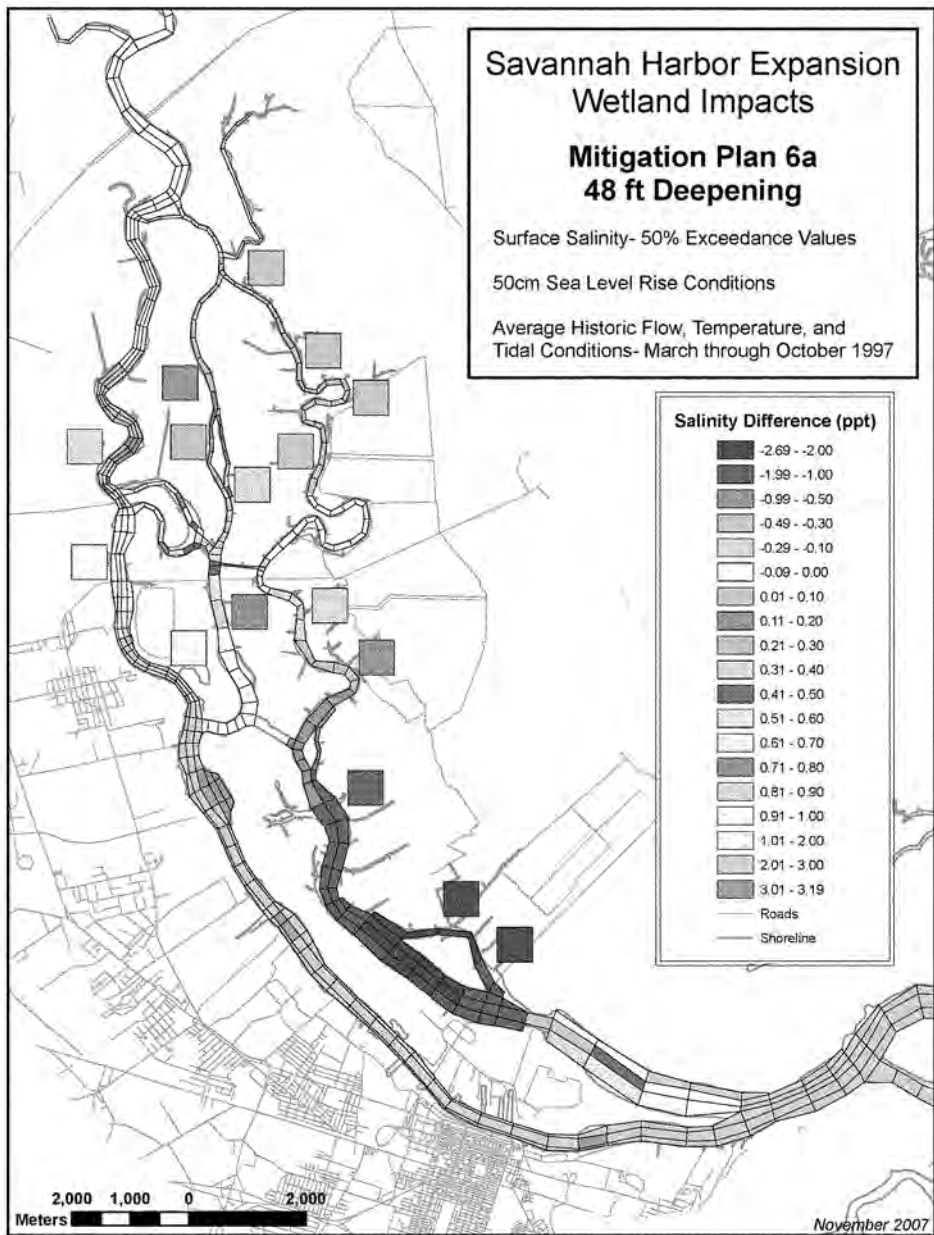


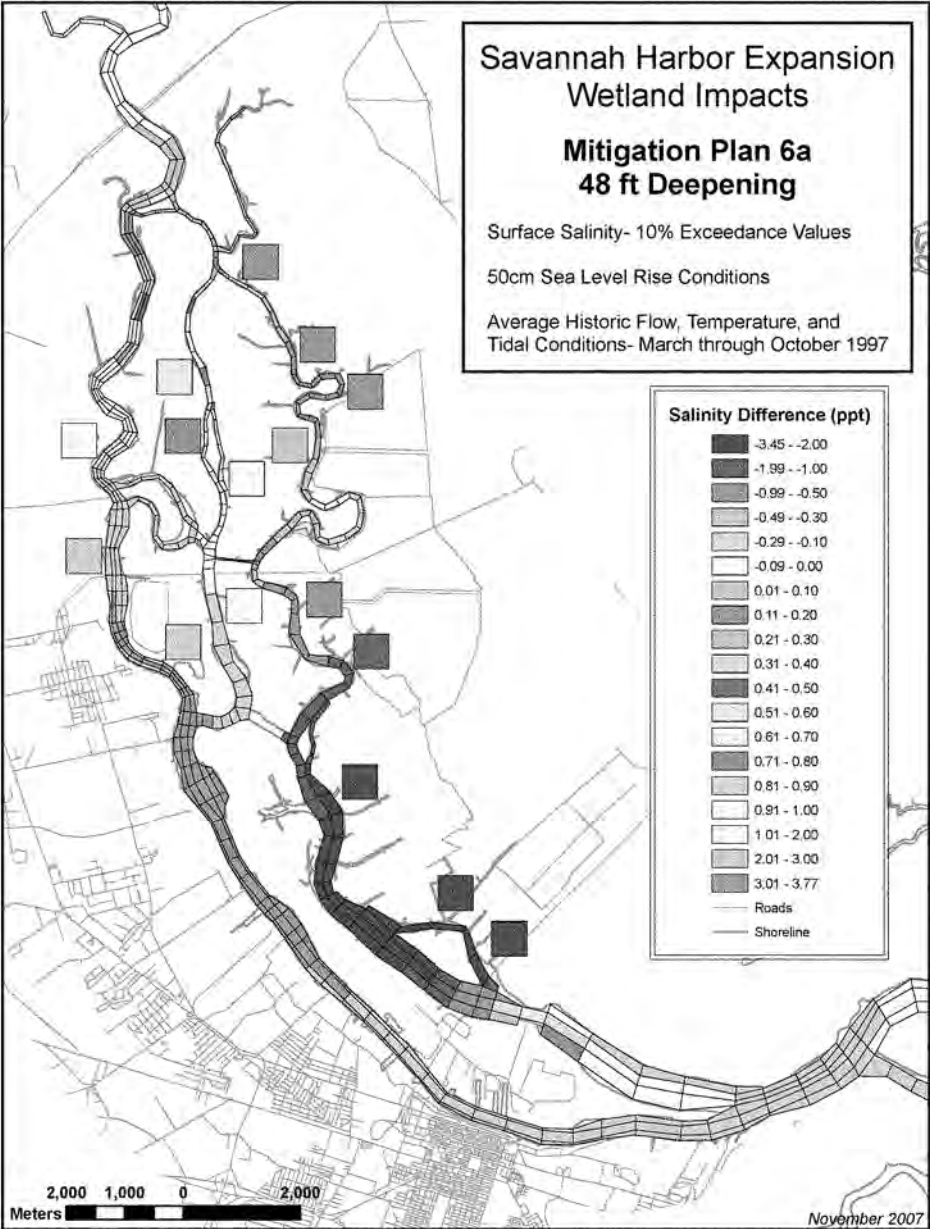


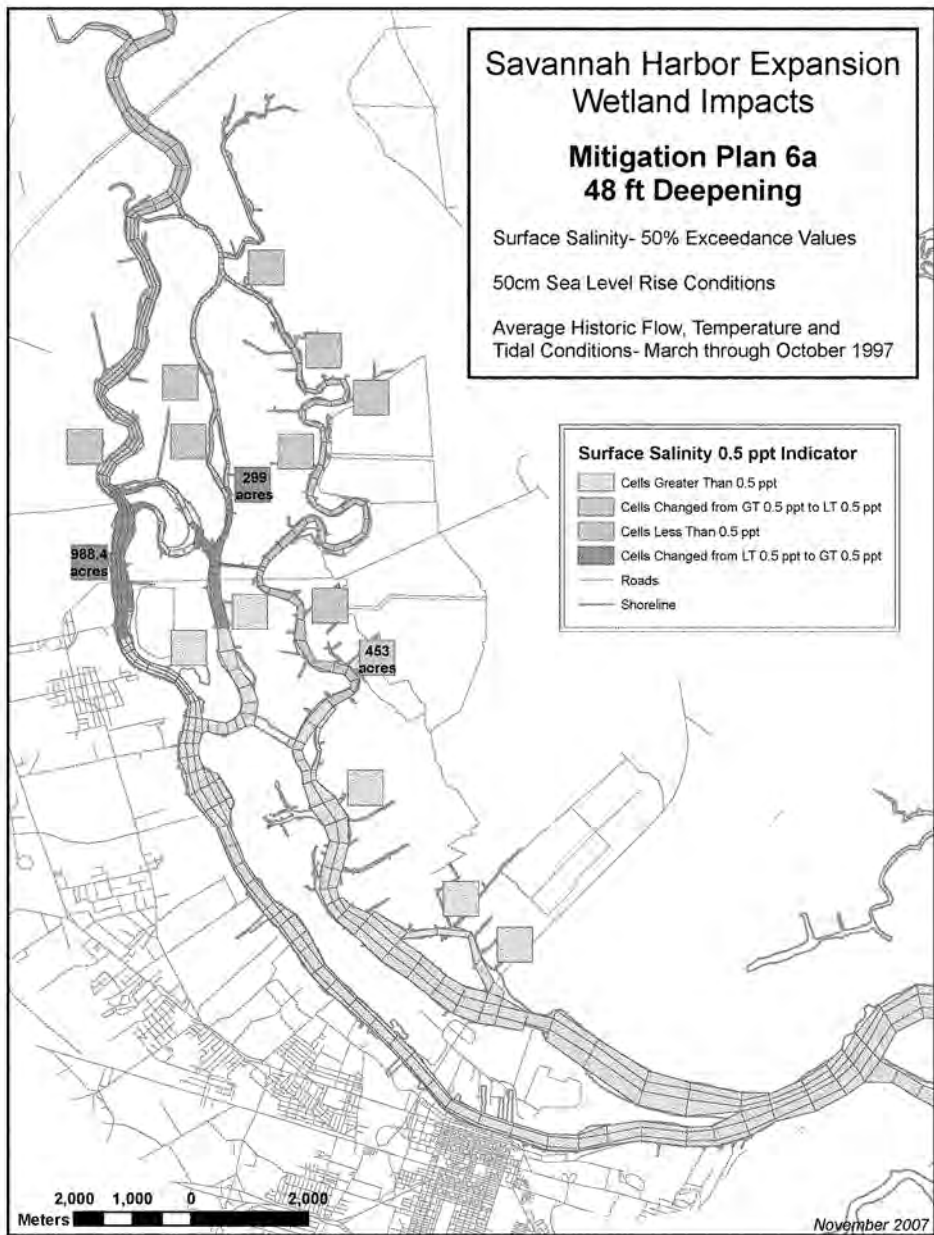


## *Sensitivity Analysis #2B*

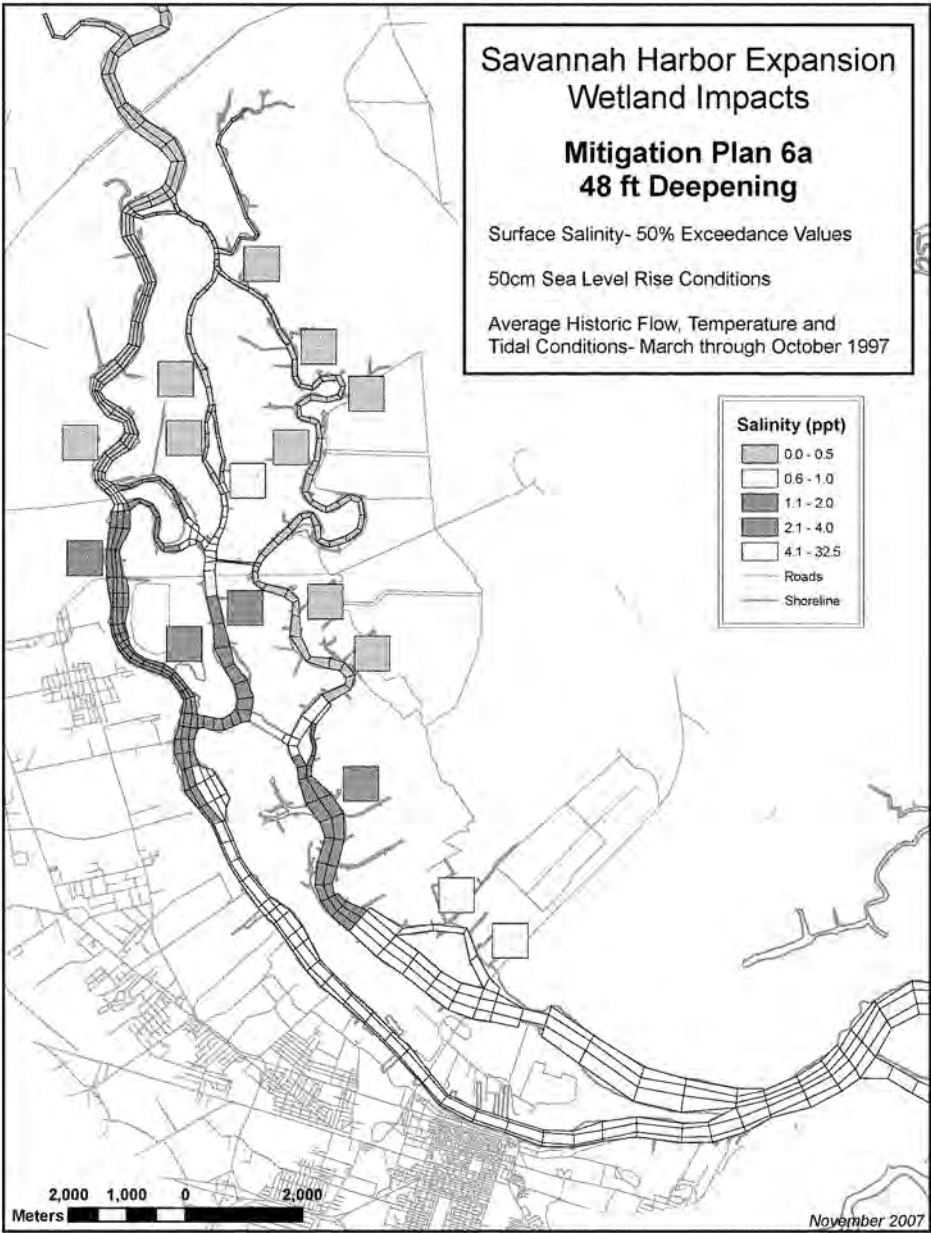
1997 (Average) Flow Conditions- 50cm Sea Level Rise

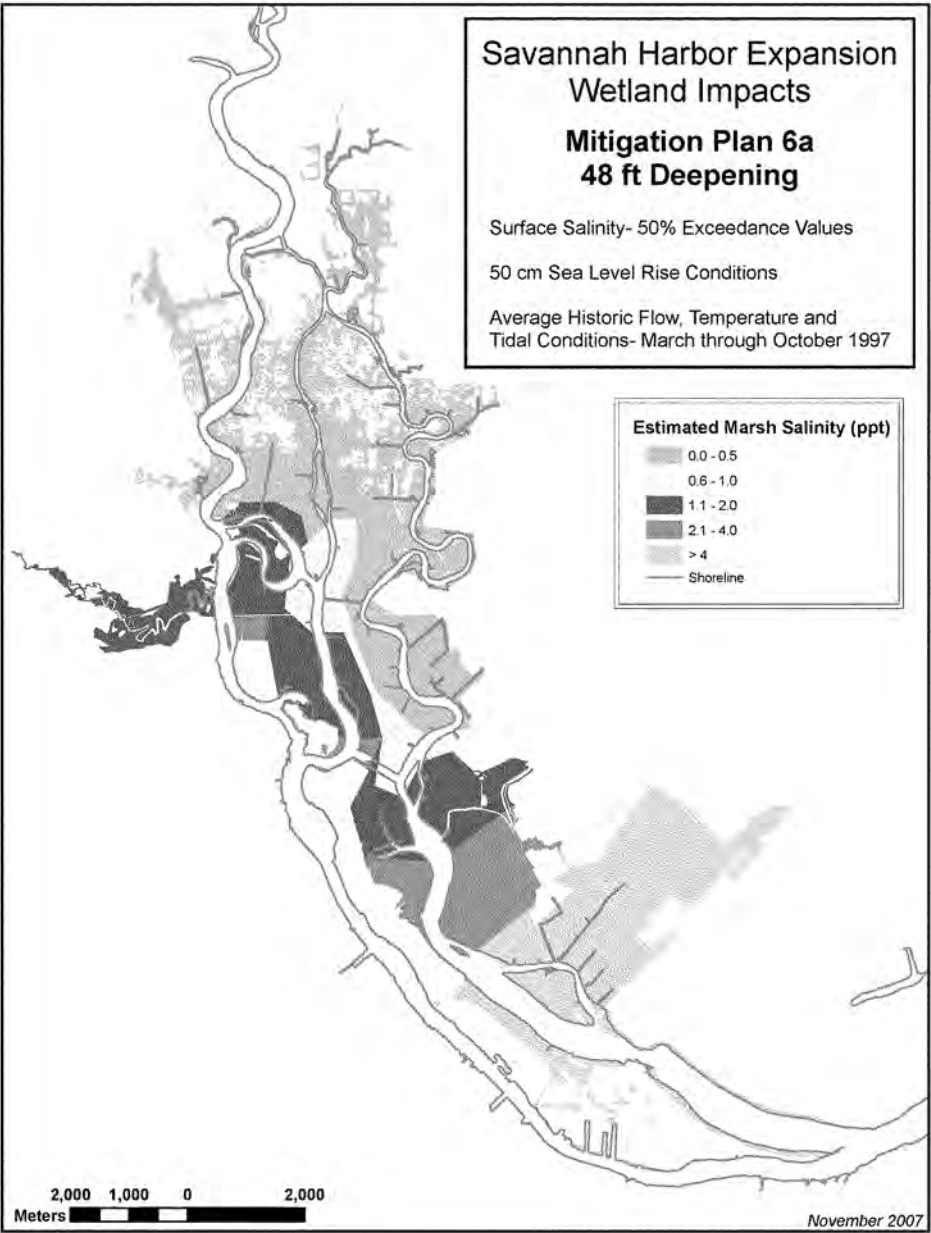














# **Savannah Harbor Expansion Project**

Evaluation of Water Quality Impacts with Proposed Mitigation Plan

*September 2009*

## Introduction

As part of the Savannah Harbor Expansion Project, impacts to water quality in the Savannah River estuary were evaluated for each project alternative channel depth (44 ft, 45 ft, 46 ft, 47 ft, and 48 ft). This report summarizes the water quality impacts, in tabular format, as a result of deepening the navigation channel along with implementation of the proposed mitigation plan. The proposed mitigation plan for each alternative project depth incorporates both modifications to the flow regime in the estuary and an alternative source of dissolved oxygen. The two proposed flow altering plans are: Plan 6b for the 44 ft channel depth and Plan 6a for the 45 ft, 46 ft, 47 ft, and 48 ft channel depth. Details of the flow altering mitigation plans are shown in Figures 1 and 2.

**Figure 1:** Plan 6a (proposed mitigation for 45 ft, 46 ft, 47 ft and 48 ft channel depths)

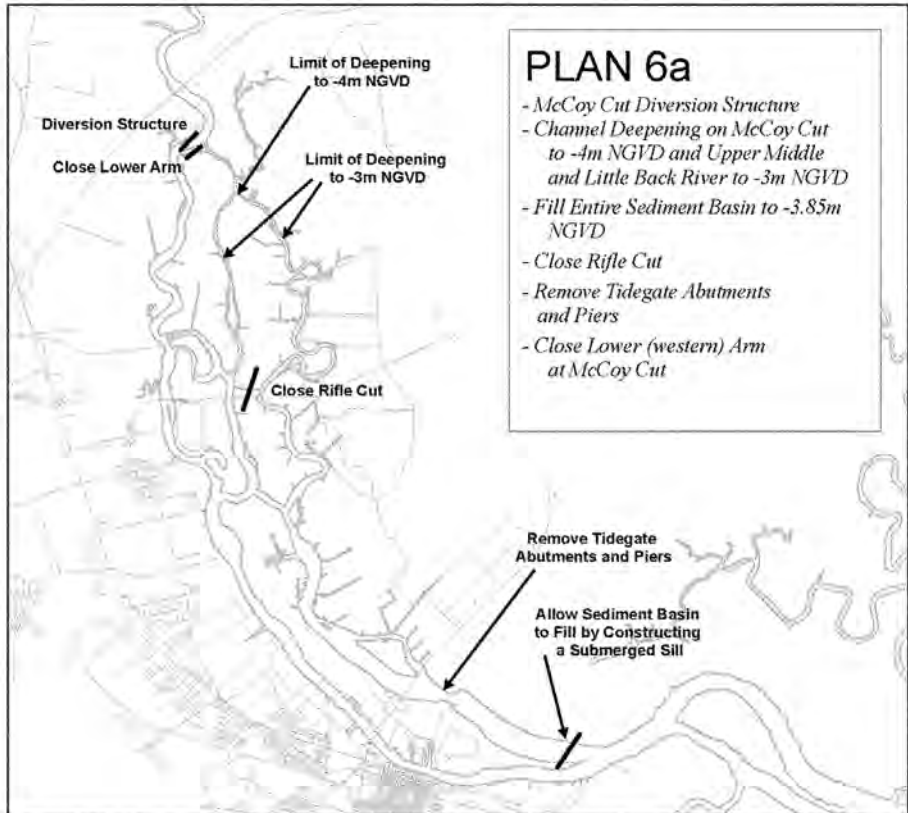
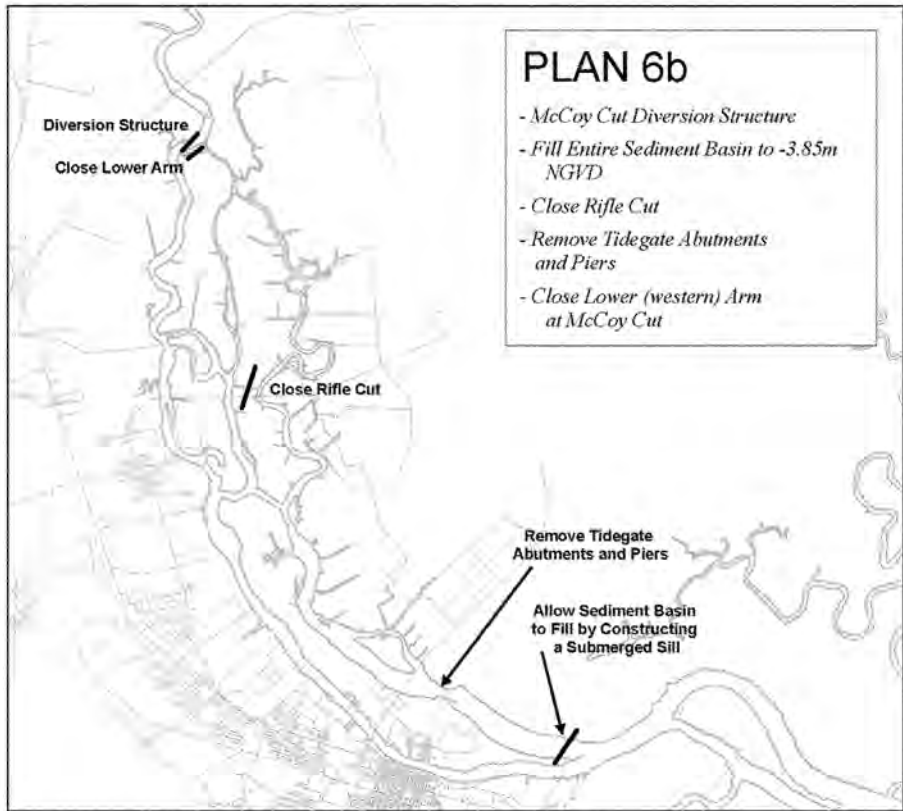


Figure 2: Plan 6b (proposed mitigation for 44 ft channel depth)



The mitigation component of the project to offset impacts to dissolved oxygen (D. O.) concentrations in the river consists of injecting superoxygenated water into the river via Speece Cones. Speece Cones were developed by Dr. Richard Speece and are manufactured by Eco-Oxygen Technologies, LLC. See Figure 3 for a photo of Speece Cones used during a D.O. demonstration project in 2007. These Speece Cones differ from the project proposal in that they were barge-mounted rather than land-based.

The D.O. mitigation plan using Speece Cone technology was developed by Tetra Tech and details of the plan are documented in the report titled *Design of Dissolved Oxygen Improvement Systems in Savannah Harbor* dated February 29, 2008. The D.O. loading required to mitigate for channel depth increases as a result of this study is summarized in Table 1. Locations around the estuary recommended for D.O. injection points are shown in Figure 4.

Figure 3: Savannah Harbor Speece Cone Demonstration Project



Photo from the Georgia Ports Authority demonstration project managed by MACTEC in the summer of 2007. Results of the study are documented in the 2008 MACTEC report titled *Savannah Harbor Reoxygenation Demonstration Project, Savannah, Georgia* which was prepared for the GPA.

Table 1: Summary of Dissolved Oxygen Loading for SHEP Mitigation

| Alternative Channel Depth | Flow Altering Mitigation Plan | Speece Cone Location | D.O. Loading Required for Mitigation (kg/day) | D.O. Loading Required for Mitigation (lbs/day) | No. of Speece Cones Required |
|---------------------------|-------------------------------|----------------------|-----------------------------------------------|------------------------------------------------|------------------------------|
| 48 ft                     | 6A                            | Tide Gate            | 2,000                                         | 4,400                                          | 1                            |
|                           |                               | Mulberry Grove       | 26,000                                        | 57,200                                         | 12                           |
| 47 ft                     | 6A                            | Tide Gate            | 4,000                                         | 8,800                                          | 2                            |
|                           |                               | Mulberry Grove       | 22,000                                        | 48,400                                         | 10                           |
| 46 ft                     | 6A                            | Tide Gate            | 5,000                                         | 11,000                                         | 3                            |
|                           |                               | Mulberry Grove       | 16,000                                        | 35,200                                         | 8                            |
| 45 ft                     | 6A                            | Tide Gate            | 5,000                                         | 11,000                                         | 3                            |
|                           |                               | Mulberry Grove       | 13,000                                        | 28,600                                         | 6                            |
| 44 ft                     | 6B                            | Tide Gate            | 10,000                                        | 22,000                                         | 5                            |
|                           |                               | Mulberry Grove       | 7,000                                         | 15,400                                         | 4                            |
|                           |                               | I-95 Bridge          | 7,000                                         | 15,400                                         | 4                            |

**Figure 4: D.O. Injection Locations**



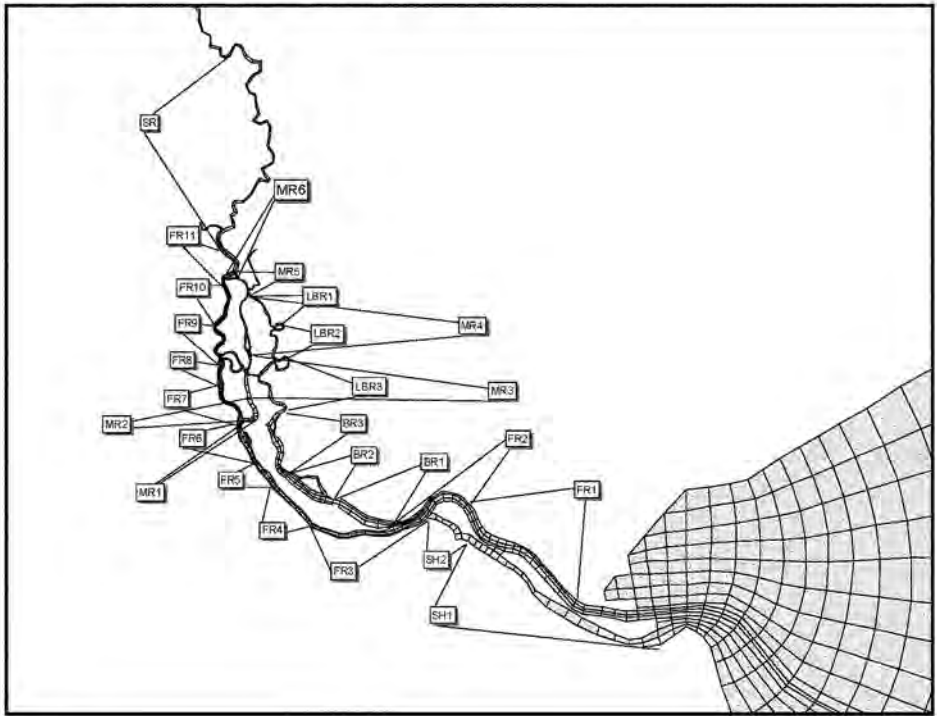
## Output Presented

Output presented in this report is supplemental to the output presented in the report titled *Design of Dissolved Oxygen Improvement Systems in Savannah Harbor* prepared by Tetra Tech and dated February 29, 2008. At the request of members of the Water Quality Interagency Coordination Team the output has been expanded to show details on model predicted changes in D.O. for four scenarios.

- Existing conditions, no deepening and no mitigation
- Navigation channel deepening only (44 ft to 48 ft)
- Deepening with flow altering mitigation plan (6a or 6b)
- Deepening with flow altering mitigation plan and the D.O. injection system

The output presented includes various tables showing D.O. concentrations and changes in concentrations for the evaluation period of August 1997 (average freshwater flow year). Since the water quality model grid is refined with a high level of detail it can be difficult to evaluate output datasets. To simplify the evaluation process the estuary has been divided into 27 spatial zones, which are areas where several model grid cells are evaluated as a group. See Figure 5.

Figure 5: Spatial Zones for Water Quality Impact Evaluation



## Results

The tables shown in the pages following the Conclusion are divided into sections for each navigation channel depth alternative, with 4 tables associated with each depth alternative and mitigation scenario. The tables present the D.O. percentile distribution in critical cells and zones. Critical cells are defined as the cell within each zone that has the lowest predicted D.O. concentration during the simulation period. In addition to the two tables showing predicted D.O. values for various percentiles for critical cells and zones there are two tables showing the change in D.O. from existing conditions for critical cells and zones.

The maximum D.O. impact to a critical cell (50<sup>th</sup> percentile value) with a 48 ft deepened channel is 0.56 mg/L and occurs in Zone FR7. With the flow altering mitigation (Plan 6a), this impact is reduced to 0.54 mg/L, which although a reduction, is not enough to fully mitigate for the impact. Once the D.O. mitigation is in place the D.O. impact to the critical cell in this zone falls to 0.01 mg/L, which is essentially a zero impact.



The maximum D.O. concentration impact within the entire zone (50<sup>th</sup> percentile value) with a 48 ft deepened channel is 0.68 mg/L and occurs in Zone FR7. With the flow altering mitigation (Plan 6a) this impact is not reduced and actually increases to 0.75 mg/L. However, with D.O. mitigation this impact is fully mitigated for and improves the D.O. concentration by 0.05 mg/L over the existing conditions.

## **Conclusion**

The results of this analysis conclude the following:

- 1) That there is an impact to water quality, specifically D.O., within the estuary due to deepening the navigation channel.
- 2) That flow altering mitigation plans, while beneficial for freshwater marshes/wetlands, do not have wide ranging benefits for impacts to D.O.
- 3) That D.O. injection, via Speece Cone technology, is a viable option for mitigating for impacts due to deepening the navigation channel.

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# **Existing Conditions**

*No Deepening, No Mitigation*

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## Dissolved Oxygen Percentiles Distribution in Critical Cells

Scenario: WASP1997Existing

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.92                   | 3.99 | 4.05 | 4.22 | 4.38 | 4.52 | 4.63 | 4.7  | 4.74 |
| FR2  | 3.66                   | 3.76 | 3.84 | 4.03 | 4.22 | 4.4  | 4.62 | 4.69 | 5.08 |
| FR3  | 3.49                   | 3.59 | 3.64 | 3.87 | 4.05 | 4.29 | 4.78 | 5.07 | 5.6  |
| FR4  | 3.5                    | 3.56 | 3.62 | 3.92 | 4.07 | 4.4  | 4.96 | 5.31 | 5.5  |
| FR5  | 3.62                   | 3.74 | 3.89 | 4.08 | 4.31 | 4.89 | 5.42 | 5.63 | 5.78 |
| FR6  | 3.69                   | 3.76 | 3.89 | 4.12 | 4.26 | 4.78 | 5.57 | 5.77 | 5.91 |
| FR7  | 4.17                   | 4.25 | 4.33 | 4.61 | 5.03 | 5.98 | 6.26 | 6.36 | 6.49 |
| FR8  | 4.66                   | 4.78 | 5.06 | 5.51 | 6.12 | 6.44 | 6.72 | 6.85 | 7.11 |
| FR9  | 4.88                   | 5.03 | 5.33 | 5.72 | 6.28 | 6.6  | 6.85 | 7.02 | 7.19 |
| FR10 | 4.31                   | 4.78 | 4.95 | 5.32 | 5.91 | 6.43 | 6.68 | 7.01 | 7.22 |
| FR11 | 4.17                   | 4.7  | 4.93 | 5.24 | 5.67 | 6.14 | 6.5  | 6.64 | 7.13 |
| MR1  | 4.41                   | 4.53 | 4.62 | 4.89 | 5.16 | 5.59 | 5.89 | 6    | 6.22 |
| MR2  | 4.03                   | 4.15 | 4.33 | 4.62 | 5.07 | 5.53 | 5.8  | 5.9  | 6.03 |
| MR3  | 3.7                    | 3.89 | 4    | 4.19 | 4.52 | 5.07 | 5.71 | 5.93 | 6.19 |
| MR4  | 3.89                   | 4.03 | 4.12 | 4.39 | 4.61 | 4.89 | 5.06 | 5.18 | 5.41 |
| MR5  | 1.49                   | 2.04 | 2.41 | 3.05 | 4.97 | 6.23 | 6.57 | 6.89 | 7.11 |
| MR6  | 2.11                   | 2.49 | 3.01 | 3.51 | 5.61 | 6.36 | 6.8  | 7.06 | 7.32 |
| LBR1 | 3.57                   | 4.35 | 4.75 | 5.13 | 5.43 | 5.64 | 5.97 | 6.16 | 6.47 |
| LBR2 | 3.69                   | 3.86 | 3.97 | 4.16 | 4.39 | 4.6  | 4.77 | 4.88 | 5.26 |
| LBR3 | 2.89                   | 3.28 | 3.47 | 3.68 | 3.95 | 4.34 | 4.73 | 4.99 | 5.24 |
| BR1  | 3.28                   | 3.41 | 3.57 | 3.74 | 3.97 | 4.2  | 4.43 | 4.53 | 4.64 |
| BR2  | 2.55                   | 2.84 | 2.99 | 3.24 | 3.44 | 3.7  | 3.84 | 3.93 | 4.03 |
| BR3  | 3.03                   | 3.26 | 3.44 | 3.62 | 3.78 | 3.95 | 4.08 | 4.15 | 4.25 |
| SCH1 | 2.39                   | 2.57 | 2.68 | 2.83 | 3.01 | 3.41 | 3.77 | 3.89 | 4.14 |
| SCH2 | 3.74                   | 3.91 | 4.01 | 4.14 | 4.33 | 4.47 | 4.6  | 4.68 | 4.82 |
| SR   | 4.69                   | 4.74 | 4.97 | 5.31 | 5.62 | 5.97 | 6.11 | 6.16 | 6.23 |
| StbR | 3.84                   | 4.22 | 4.57 | 5.04 | 5.69 | 6.2  | 6.49 | 6.64 | 6.84 |

**D.O. %-tiles for zones of Savannah Estuary**

Simulation Period:      Year 1997      AUGUST 1 -AUGUST 31  
 Baseline      Scenario: WASP1997Existing

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.13                                  | 4.20 | 4.26 | 4.37 | 4.50 | 4.59 | 4.72 | 4.80 | 4.84 |
| FR2       | 3.94                                  | 3.99 | 4.03 | 4.25 | 4.37 | 4.54 | 4.65 | 4.69 | 4.76 |
| FR3       | 3.70                                  | 3.77 | 3.83 | 4.03 | 4.19 | 4.38 | 4.71 | 4.79 | 4.99 |
| FR4       | 3.66                                  | 3.71 | 3.75 | 3.99 | 4.12 | 4.37 | 4.93 | 5.31 | 5.54 |
| FR5       | 3.68                                  | 3.76 | 3.88 | 4.08 | 4.27 | 4.77 | 5.41 | 5.65 | 5.79 |
| FR6       | 3.96                                  | 4.01 | 4.11 | 4.32 | 4.55 | 5.20 | 5.78 | 5.92 | 6.04 |
| FR7       | 4.44                                  | 4.55 | 4.69 | 5.09 | 5.85 | 6.18 | 6.41 | 6.56 | 6.70 |
| FR8       | 4.86                                  | 5.05 | 5.29 | 5.66 | 6.15 | 6.43 | 6.67 | 6.80 | 6.98 |
| FR9       | 5.67                                  | 5.90 | 6.02 | 6.26 | 6.54 | 6.81 | 7.07 | 7.23 | 7.34 |
| FR10      | 5.71                                  | 5.85 | 6.02 | 6.30 | 6.57 | 6.81 | 7.16 | 7.24 | 7.32 |
| FR11      | 4.88                                  | 5.10 | 5.28 | 5.59 | 5.88 | 6.18 | 6.45 | 6.55 | 6.68 |
| MR1       | 4.48                                  | 4.58 | 4.70 | 4.89 | 5.17 | 5.54 | 5.84 | 5.97 | 6.04 |
| MR2       | 4.20                                  | 4.31 | 4.51 | 4.79 | 5.13 | 5.50 | 5.80 | 5.91 | 6.03 |
| MR3       | 3.85                                  | 4.04 | 4.10 | 4.38 | 4.74 | 5.22 | 5.59 | 5.72 | 5.85 |
| MR4       | 4.39                                  | 4.51 | 4.61 | 4.78 | 5.05 | 5.24 | 5.44 | 5.54 | 5.70 |
| MR5       | 2.31                                  | 2.55 | 2.97 | 3.46 | 5.33 | 6.16 | 6.53 | 6.82 | 7.01 |
| MR6       | 2.15                                  | 2.53 | 3.05 | 3.58 | 5.69 | 6.33 | 6.80 | 6.94 | 7.27 |
| LBR1      | 4.30                                  | 4.50 | 4.59 | 4.80 | 4.99 | 5.19 | 5.30 | 5.45 | 5.57 |
| LBR2      | 3.70                                  | 3.81 | 3.96 | 4.13 | 4.35 | 4.55 | 4.71 | 4.77 | 4.89 |
| LBR3      | 3.54                                  | 3.58 | 3.65 | 3.78 | 3.95 | 4.11 | 4.24 | 4.35 | 4.46 |
| BR1       | 3.53                                  | 3.58 | 3.64 | 3.90 | 4.04 | 4.21 | 4.43 | 4.50 | 4.60 |
| BR2       | 3.30                                  | 3.38 | 3.46 | 3.62 | 3.82 | 3.99 | 4.14 | 4.30 | 4.39 |
| BR3       | 3.46                                  | 3.51 | 3.56 | 3.63 | 3.74 | 3.85 | 3.97 | 3.99 | 4.02 |
| SCh1      | 3.51                                  | 3.56 | 3.63 | 3.72 | 3.83 | 3.95 | 4.04 | 4.10 | 4.16 |
| SCh2      | 3.94                                  | 4.04 | 4.09 | 4.25 | 4.38 | 4.49 | 4.61 | 4.65 | 4.73 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.84 | 6.17 | 6.35 | 6.41 | 6.48 |
| StbR      | 4.74                                  | 4.93 | 5.09 | 5.44 | 5.79 | 6.09 | 6.30 | 6.43 | 6.56 |

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## **48 ft Channel Depth**

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
Scenario: WASP-1997-6ftonly

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.97                   | 4.03 | 4.07 | 4.2  | 4.33 | 4.44 | 4.53 | 4.6  | 4.64 |
| FR2  | 3.66                   | 3.76 | 3.85 | 3.99 | 4.13 | 4.28 | 4.43 | 4.47 | 4.52 |
| FR3  | 3.52                   | 3.57 | 3.63 | 3.81 | 3.94 | 4.1  | 4.41 | 4.7  | 5.26 |
| FR4  | 3.57                   | 3.6  | 3.65 | 3.84 | 3.95 | 4.11 | 4.4  | 4.68 | 5.36 |
| FR5  | 3.69                   | 3.74 | 3.78 | 3.91 | 4.05 | 4.16 | 4.52 | 4.73 | 4.9  |
| FR6  | 3.72                   | 3.78 | 3.85 | 3.99 | 4.1  | 4.27 | 4.65 | 4.9  | 5.11 |
| FR7  | 4.01                   | 4.13 | 4.18 | 4.28 | 4.47 | 4.87 | 5.68 | 6.03 | 6.34 |
| FR8  | 4.38                   | 4.45 | 4.56 | 4.81 | 5.62 | 6.15 | 6.45 | 6.57 | 6.72 |
| FR9  | 4.53                   | 4.62 | 4.76 | 5.04 | 5.77 | 6.32 | 6.61 | 6.78 | 6.89 |
| FR10 | 4.34                   | 4.82 | 4.97 | 5.32 | 5.91 | 6.42 | 6.69 | 7.01 | 7.22 |
| FR11 | 4.24                   | 4.64 | 4.94 | 5.25 | 5.65 | 6.14 | 6.51 | 6.66 | 7.16 |
| MR1  | 4.22                   | 4.29 | 4.38 | 4.6  | 4.88 | 5.11 | 5.34 | 5.49 | 5.86 |
| MR2  | 4                      | 4.11 | 4.26 | 4.52 | 4.85 | 5.18 | 5.43 | 5.53 | 5.72 |
| MR3  | 3.71                   | 3.87 | 3.97 | 4.15 | 4.44 | 4.89 | 5.49 | 5.76 | 6.16 |
| MR4  | 3.97                   | 4.16 | 4.28 | 4.45 | 4.72 | 4.99 | 5.15 | 5.3  | 5.49 |
| MR5  | 1.49                   | 2.03 | 2.48 | 3.09 | 4.84 | 6.25 | 6.58 | 6.92 | 7.12 |
| MR6  | 2.12                   | 2.55 | 3.01 | 3.61 | 5.57 | 6.39 | 6.81 | 7.08 | 7.34 |
| LBR1 | 3.55                   | 4.35 | 4.78 | 5.22 | 5.47 | 5.69 | 5.98 | 6.19 | 6.51 |
| LBR2 | 3.42                   | 3.84 | 3.94 | 4.16 | 4.42 | 4.6  | 4.81 | 4.97 | 5.26 |
| LBR3 | 3.21                   | 3.43 | 3.49 | 3.82 | 4.19 | 4.64 | 5.03 | 5.23 | 5.49 |
| BR1  | 3.28                   | 3.43 | 3.57 | 3.73 | 3.94 | 4.15 | 4.34 | 4.43 | 4.61 |
| BR2  | 2.58                   | 2.86 | 2.99 | 3.31 | 3.69 | 3.98 | 4.14 | 4.28 | 4.36 |
| BR3  | 3.01                   | 3.28 | 3.43 | 3.61 | 3.76 | 3.91 | 4.03 | 4.09 | 4.18 |
| SCH1 | 2.38                   | 2.62 | 2.73 | 2.88 | 3.2  | 3.96 | 4.32 | 4.41 | 4.59 |
| SCH2 | 3.7                    | 3.8  | 3.91 | 4.12 | 4.27 | 4.41 | 4.53 | 4.63 | 4.73 |
| SR   | 4.68                   | 4.74 | 4.97 | 5.31 | 5.62 | 5.97 | 6.11 | 6.16 | 6.22 |
| StbR | 3.53                   | 4.23 | 4.49 | 5.06 | 5.59 | 5.99 | 6.28 | 6.44 | 6.66 |

Delta D.O. Percentiles for Critical Cells

Baseline: Scenario: WASP1997Existing

Project: Scenario: WASP-1997-6ftonly

| Zone | Delta D.O. Percentile |      |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    |      | 5%    |      | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |
|      | mg/l                  | %    | mg/l  | %    | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1  | 0.05                  | 1.3  | 0.04  | 1.0  | 0.02  | 0.5   | -0.02 | -0.5  | -0.05 | -1.1  | -0.08 | -1.8  | -0.1  | -2.2  | -0.1  | -2.1  | -0.1  | -2.1  |
| FR2  | 0                     | 0.0  | 0     | 0.0  | 0.01  | 0.3   | -0.04 | -1.0  | -0.09 | -2.1  | -0.12 | -2.7  | -0.19 | -4.1  | -0.22 | -4.7  | -0.56 | -11.0 |
| FR3  | 0.03                  | 0.9  | -0.02 | -0.6 | -0.01 | -0.3  | -0.06 | -1.6  | -0.11 | -2.7  | -0.19 | -4.4  | -0.37 | -7.7  | -0.37 | -7.3  | -0.34 | -6.1  |
| FR4  | 0.07                  | 2.0  | 0.04  | 1.1  | 0.03  | 0.8   | -0.08 | -2.0  | -0.12 | -2.9  | -0.29 | -6.6  | -0.56 | -11.3 | -0.83 | -11.9 | -0.14 | -2.5  |
| FR5  | 0.07                  | 1.9  | 0     | 0.0  | -0.11 | -2.8  | -0.17 | -4.2  | -0.26 | -6.0  | -0.73 | -14.9 | -0.9  | -16.6 | -0.9  | -16.0 | -0.88 | -15.2 |
| FR6  | 0.03                  | 0.8  | 0.02  | 0.5  | -0.04 | -1.0  | -0.13 | -3.2  | -0.16 | -3.8  | -0.51 | -10.7 | -0.92 | -16.5 | -0.87 | -15.1 | -0.8  | -13.5 |
| FR7  | -0.16                 | -3.8 | -0.12 | -2.8 | -0.15 | -3.5  | -0.33 | -7.2  | -0.56 | -11.1 | -1.11 | -18.6 | -0.58 | -9.3  | -0.33 | -5.2  | -0.15 | -2.3  |
| FR8  | -0.28                 | -6.0 | -0.33 | -6.9 | -0.5  | -9.9  | -0.7  | -12.7 | -0.5  | -8.2  | -0.29 | -4.5  | -0.27 | -4.0  | -0.28 | -4.1  | -0.39 | -5.5  |
| FR9  | -0.35                 | -7.2 | -0.41 | -8.2 | -0.57 | -10.7 | -0.68 | -11.9 | -0.51 | -8.1  | -0.28 | -4.2  | -0.24 | -3.5  | -0.24 | -3.4  | -0.3  | -4.2  |
| FR10 | 0.03                  | 0.7  | 0.04  | 0.8  | 0.02  | 0.4   | 0     | 0.0   | 0     | 0.0   | -0.01 | -0.2  | 0.01  | 0.1   | 0     | 0.0   | 0     | 0.0   |
| FR11 | 0.07                  | 1.7  | -0.06 | -1.3 | 0.01  | 0.2   | 0.01  | 0.2   | -0.02 | -0.4  | 0     | 0.0   | 0.01  | 0.2   | 0.02  | 0.3   | 0.03  | 0.4   |
| MR1  | -0.19                 | -4.3 | -0.24 | -5.3 | -0.24 | -5.2  | -0.29 | -5.9  | -0.28 | -5.4  | -0.48 | -8.6  | -0.55 | -9.3  | -0.51 | -8.5  | -0.36 | -5.8  |
| MR2  | -0.03                 | -0.7 | -0.04 | -1.0 | -0.07 | -1.6  | -0.1  | -2.2  | -0.22 | -4.3  | -0.35 | -6.3  | -0.37 | -6.4  | -0.37 | -6.3  | -0.31 | -5.1  |
| MR3  | 0.01                  | 0.3  | -0.02 | -0.5 | -0.03 | -0.7  | -0.04 | -1.0  | -0.08 | -1.8  | -0.18 | -3.6  | -0.22 | -3.9  | -0.17 | -2.9  | -0.03 | -0.5  |
| MR4  | 0.08                  | 2.1  | 0.13  | 3.2  | 0.16  | 3.9   | 0.06  | 1.4   | 0.11  | 2.4   | 0.1   | 2.0   | 0.09  | 1.8   | 0.12  | 2.3   | 0.08  | 1.5   |
| MR5  | 0                     | 0.0  | -0.01 | -0.5 | 0.07  | 2.9   | 0.04  | 1.3   | -0.13 | -2.6  | 0.02  | 0.3   | 0.01  | 0.2   | 0.03  | 0.4   | 0.01  | 0.1   |
| MR6  | 0.01                  | 0.5  | 0.06  | 2.4  | 0     | 0.0   | 0.1   | 2.8   | -0.04 | -0.7  | 0.03  | 0.5   | 0.01  | 0.1   | 0.02  | 0.3   | 0.02  | 0.3   |
| LBR1 | -0.02                 | -0.6 | 0     | 0.0  | 0.03  | 0.6   | 0.09  | 1.8   | 0.04  | 0.7   | 0.05  | 0.9   | 0.01  | 0.2   | 0.03  | 0.5   | 0.04  | 0.6   |
| LBR2 | -0.27                 | -7.3 | -0.02 | -0.5 | -0.03 | -0.8  | 0     | 0.0   | 0.03  | 0.7   | 0     | 0.0   | 0.04  | 0.8   | 0.09  | 1.8   | 0     | 0.0   |
| LBR3 | 0.32                  | 11.1 | 0.15  | 4.6  | 0.02  | 0.6   | 0.14  | 3.8   | 0.24  | 6.1   | 0.3   | 6.9   | 0.3   | 6.3   | 0.24  | 4.8   | 0.25  | 4.8   |
| BR1  | 0                     | 0.0  | 0.02  | 0.6  | 0     | 0.0   | -0.01 | -0.3  | -0.03 | -0.8  | -0.05 | -1.2  | -0.09 | -2.0  | -0.1  | -2.2  | -0.03 | -0.6  |
| BR2  | 0.03                  | 1.2  | 0.02  | 0.7  | 0     | 0.0   | 0.07  | 2.2   | 0.25  | 7.3   | 0.28  | 7.6   | 0.3   | 7.8   | 0.35  | 8.9   | 0.33  | 8.2   |
| BR3  | -0.02                 | -0.7 | 0.02  | 0.6  | -0.01 | -0.3  | -0.01 | -0.3  | -0.02 | -0.5  | -0.04 | -1.0  | -0.05 | -1.2  | -0.06 | -1.4  | -0.07 | -1.6  |
| SCH1 | -0.01                 | -0.4 | 0.05  | 1.9  | 0.05  | 1.9   | 0.05  | 1.8   | 0.19  | 6.3   | 0.55  | 16.1  | 0.55  | 14.6  | 0.52  | 13.4  | 0.45  | 10.9  |
| SCH2 | -0.04                 | -1.1 | -0.11 | -2.8 | -0.1  | -2.5  | -0.02 | -0.5  | -0.06 | -1.4  | -0.08 | -1.3  | -0.07 | -1.5  | -0.05 | -1.1  | -0.09 | -1.9  |
| SR   | -0.01                 | -0.2 | 0     | 0.0  | 0     | 0.0   | 0     | 0.0   | 0     | 0.0   | 0     | 0.0   | 0     | 0.0   | 0     | 0.0   | -0.01 | -0.2  |
| SibR | -0.31                 | -8.1 | 0.01  | 0.2  | -0.08 | -1.8  | 0.02  | 0.4   | -0.1  | -1.8  | -0.21 | -3.4  | -0.21 | -3.2  | -0.2  | -3.0  | -0.18 | -2.6  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31  
 Project Scenario: WASP-1997-6ftonly

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.18                                  | 4.24 | 4.30 | 4.38 | 4.48 | 4.57 | 4.66 | 4.74 | 4.82 |
| FR2       | 3.98                                  | 4.02 | 4.07 | 4.23 | 4.34 | 4.46 | 4.54 | 4.59 | 4.63 |
| FR3       | 3.76                                  | 3.82 | 3.86 | 3.99 | 4.13 | 4.26 | 4.41 | 4.47 | 4.54 |
| FR4       | 3.72                                  | 3.75 | 3.77 | 3.92 | 4.03 | 4.15 | 4.42 | 4.54 | 4.77 |
| FR5       | 3.75                                  | 3.79 | 3.85 | 4.00 | 4.12 | 4.29 | 4.61 | 4.88 | 5.11 |
| FR6       | 3.93                                  | 3.95 | 4.00 | 4.15 | 4.25 | 4.47 | 4.94 | 5.24 | 5.42 |
| FR7       | 4.26                                  | 4.32 | 4.42 | 4.62 | 5.17 | 5.76 | 6.10 | 6.26 | 6.38 |
| FR8       | 4.53                                  | 4.65 | 4.78 | 5.05 | 5.69 | 6.15 | 6.44 | 6.55 | 6.65 |
| FR9       | 5.13                                  | 5.38 | 5.53 | 5.92 | 6.33 | 6.66 | 6.89 | 7.13 | 7.24 |
| FR10      | 5.69                                  | 5.85 | 6.02 | 6.30 | 6.56 | 6.82 | 7.16 | 7.21 | 7.32 |
| FR11      | 4.87                                  | 5.11 | 5.27 | 5.59 | 5.89 | 6.18 | 6.45 | 6.56 | 6.68 |
| MR1       | 4.27                                  | 4.35 | 4.47 | 4.65 | 4.87 | 5.12 | 5.32 | 5.43 | 5.58 |
| MR2       | 4.14                                  | 4.26 | 4.39 | 4.59 | 4.84 | 5.10 | 5.37 | 5.47 | 5.57 |
| MR3       | 3.86                                  | 4.03 | 4.08 | 4.33 | 4.63 | 5.02 | 5.36 | 5.47 | 5.64 |
| MR4       | 4.42                                  | 4.51 | 4.63 | 4.79 | 5.06 | 5.24 | 5.45 | 5.60 | 5.74 |
| MR5       | 2.30                                  | 2.59 | 2.99 | 3.53 | 5.33 | 6.18 | 6.53 | 6.79 | 7.03 |
| MR6       | 2.16                                  | 2.63 | 3.10 | 3.63 | 5.69 | 6.34 | 6.78 | 6.96 | 7.28 |
| LBR1      | 4.29                                  | 4.51 | 4.60 | 4.85 | 5.03 | 5.22 | 5.33 | 5.47 | 5.60 |
| LBR2      | 3.68                                  | 3.78 | 3.95 | 4.14 | 4.37 | 4.56 | 4.74 | 4.78 | 4.91 |
| LBR3      | 3.65                                  | 3.73 | 3.78 | 3.88 | 4.03 | 4.19 | 4.35 | 4.43 | 4.53 |
| BR1       | 3.55                                  | 3.59 | 3.66 | 3.86 | 3.99 | 4.14 | 4.32 | 4.40 | 4.47 |
| BR2       | 3.30                                  | 3.37 | 3.44 | 3.59 | 3.78 | 3.95 | 4.08 | 4.22 | 4.31 |
| BR3       | 3.42                                  | 3.48 | 3.52 | 3.59 | 3.71 | 3.86 | 3.96 | 3.99 | 4.02 |
| SCh1      | 3.48                                  | 3.55 | 3.61 | 3.73 | 3.83 | 3.93 | 4.01 | 4.07 | 4.12 |
| SCh2      | 3.94                                  | 4.02 | 4.09 | 4.21 | 4.32 | 4.42 | 4.51 | 4.57 | 4.66 |
| SR        | 4.90                                  | 4.96 | 5.18 | 5.52 | 5.84 | 6.17 | 6.35 | 6.40 | 6.48 |
| StbR      | 4.46                                  | 4.71 | 4.91 | 5.19 | 5.51 | 5.80 | 6.01 | 6.09 | 6.20 |



# Difference of D.O. percentiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline nario: WASP1997Existing

Project nario: WASP-1997-6ftonly

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       | Project - Baseline Relative Difference (%) |      |      |       |       |       |       |       |       |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------------------------------------------|------|------|-------|-------|-------|-------|-------|-------|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   | 1%                                         | 5%   | 10%  | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |
| FR1       | 0.05                                 | 0.04  | 0.04  | 0.01  | -0.01 | -0.02 | -0.06 | -0.05 | -0.03 | 1.3                                        | 1.1  | 0.9  | 0.2   | -0.3  | -0.5  | -1.3  | -1.1  | -0.6  |
| FR2       | 0.04                                 | 0.03  | 0.04  | -0.03 | -0.04 | -0.08 | -0.11 | -0.10 | -0.13 | 1.1                                        | 0.8  | 0.9  | -0.6  | -0.8  | -1.8  | -2.3  | -2.2  | -2.7  |
| FR3       | 0.07                                 | 0.05  | 0.03  | -0.03 | -0.06 | -0.12 | -0.30 | -0.32 | -0.45 | 1.8                                        | 1.3  | 0.9  | -0.8  | -1.4  | -2.7  | -6.4  | -6.6  | -9.0  |
| FR4       | 0.06                                 | 0.04  | 0.02  | -0.07 | -0.09 | -0.22 | -0.51 | -0.77 | -0.78 | 1.7                                        | 1.2  | 0.6  | -1.6  | -2.2  | -5.0  | -10.3 | -14.5 | -14.1 |
| FR5       | 0.07                                 | 0.03  | -0.04 | -0.07 | -0.15 | -0.48 | -0.80 | -0.78 | -0.68 | 1.9                                        | 0.9  | -1.0 | -1.8  | -3.5  | -10.0 | -14.8 | -13.5 | -11.8 |
| FR6       | -0.03                                | -0.06 | -0.11 | -0.17 | -0.30 | -0.73 | -0.84 | -0.68 | -0.62 | -0.7                                       | -1.4 | -2.7 | -3.9  | -6.5  | -14.0 | -14.5 | -11.5 | -10.2 |
| FR7       | -0.18                                | -0.23 | -0.28 | -0.47 | -0.68 | -0.43 | -0.31 | -0.31 | -0.32 | -3.9                                       | -5.0 | -5.9 | -9.2  | -11.6 | -6.9  | -4.9  | -4.6  | -4.8  |
| FR8       | -0.33                                | -0.40 | -0.51 | -0.61 | -0.47 | -0.28 | -0.24 | -0.25 | -0.33 | -6.9                                       | -7.9 | -9.6 | -10.8 | -7.6  | -4.4  | -3.6  | -3.7  | -4.7  |
| FR9       | -0.54                                | -0.53 | -0.49 | -0.34 | -0.21 | -0.15 | -0.18 | -0.10 | -0.10 | -9.5                                       | -8.9 | -8.1 | -5.4  | -3.1  | -2.1  | -2.5  | -1.3  | -1.3  |
| FR10      | -0.02                                | 0.00  | 0.01  | 0.00  | -0.01 | 0.01  | 0.00  | -0.03 | 0.00  | -0.3                                       | 0.1  | 0.1  | 0.0   | -0.1  | 0.1   | 0.0   | -0.4  | 0.0   |
| FR11      | 0.00                                 | 0.01  | 0.00  | 0.01  | 0.01  | 0.00  | 0.00  | 0.01  | 0.01  | -0.1                                       | 0.1  | -0.1 | 0.1   | 0.2   | 0.0   | 0.0   | 0.1   | 0.1   |
| MR1       | -0.21                                | -0.23 | -0.23 | -0.25 | -0.30 | -0.42 | -0.52 | -0.54 | -0.47 | -4.8                                       | -5.1 | -4.8 | -5.0  | -5.8  | -7.5  | -8.9  | -9.0  | -7.7  |
| MR2       | -0.06                                | -0.05 | -0.13 | -0.19 | -0.29 | -0.39 | -0.43 | -0.44 | -0.46 | -1.4                                       | -1.2 | -2.8 | -4.0  | -5.6  | -7.2  | -7.4  | -7.4  | -7.7  |
| MR3       | 0.00                                 | -0.01 | -0.02 | -0.05 | -0.11 | -0.20 | -0.23 | -0.25 | -0.21 | 0.1                                        | -0.2 | -0.5 | -1.2  | -2.2  | -3.8  | -4.2  | -4.4  | -3.6  |
| MR4       | 0.03                                 | 0.00  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.06  | 0.04  | 0.7                                        | 0.1  | 0.3  | 0.2   | 0.2   | 0.0   | 0.3   | 1.0   | 0.7   |
| MR5       | -0.02                                | 0.04  | 0.03  | 0.07  | 0.00  | 0.02  | 0.00  | -0.04 | 0.02  | -0.7                                       | 1.4  | 0.9  | 2.0   | 0.0   | 0.4   | 0.0   | -0.5  | 0.3   |
| MR6       | 0.01                                 | 0.09  | 0.05  | 0.04  | 0.00  | 0.02  | -0.02 | 0.02  | 0.01  | 0.5                                        | 3.7  | 1.5  | 1.2   | 0.1   | 0.3   | -0.3  | 0.3   | 0.1   |
| LBR1      | 0.00                                 | 0.02  | 0.01  | 0.05  | 0.04  | 0.03  | 0.03  | 0.03  | 0.03  | 0.0                                        | 0.4  | 0.1  | 1.0   | 0.9   | 0.6   | 0.6   | 0.5   | 0.6   |
| LBR2      | -0.01                                | -0.02 | -0.01 | 0.01  | 0.01  | 0.00  | 0.03  | 0.01  | 0.02  | -0.4                                       | -0.6 | -0.2 | 0.2   | 0.3   | 0.1   | 0.6   | 0.3   | 0.4   |
| LBR3      | 0.11                                 | 0.15  | 0.12  | 0.10  | 0.08  | 0.08  | 0.11  | 0.08  | 0.06  | 3.2                                        | 4.2  | 3.4  | 2.6   | 2.1   | 1.9   | 2.6   | 1.8   | 1.4   |
| BR1       | 0.02                                 | 0.01  | 0.02  | -0.04 | -0.05 | -0.08 | -0.11 | -0.10 | -0.14 | 0.6                                        | 0.3  | 0.5  | -0.9  | -1.1  | -1.8  | -2.5  | -2.3  | -2.9  |
| BR2       | 0.00                                 | -0.01 | -0.01 | -0.02 | -0.04 | -0.04 | -0.06 | -0.07 | -0.08 | 0.0                                        | -0.4 | -0.4 | -0.7  | -1.0  | -1.0  | -1.5  | -1.7  | -1.8  |
| BR3       | -0.04                                | -0.03 | -0.04 | -0.04 | -0.03 | 0.01  | -0.01 | -0.01 | 0.01  | -1.2                                       | -0.9 | -1.2 | -1.1  | -0.8  | 0.4   | -0.3  | -0.2  | 0.2   |
| SCh1      | -0.03                                | 0.00  | -0.02 | 0.01  | 0.00  | -0.02 | -0.03 | -0.03 | -0.04 | -0.9                                       | -0.1 | -0.4 | 0.2   | 0.0   | -0.6  | -0.8  | -0.7  | -1.0  |
| SCh2      | 0.00                                 | -0.02 | 0.00  | -0.04 | -0.06 | -0.08 | -0.09 | -0.08 | -0.07 | 0.0                                        | -0.6 | -0.1 | -0.9  | -1.4  | -1.7  | -2.0  | -1.7  | -1.5  |
| SR        | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.0                                        | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| StbR      | -0.28                                | -0.22 | -0.18 | -0.25 | -0.28 | -0.29 | -0.29 | -0.34 | -0.36 | -6.0                                       | -4.4 | -3.5 | -4.5  | -4.8  | -4.8  | -4.6  | -5.2  | -5.5  |

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# **48 ft Channel Depth**

*Mitigation Plan 6a*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
Scenario: WASP-1997-Plan6a\_6ft

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.94                   | 4.01 | 4.06 | 4.22 | 4.35 | 4.47 | 4.54 | 4.59 | 4.64 |
| FR2  | 3.74                   | 4.09 | 4.19 | 4.32 | 4.47 | 4.6  | 4.76 | 4.8  | 4.93 |
| FR3  | 3.61                   | 3.66 | 3.7  | 3.93 | 4.02 | 4.16 | 4.53 | 4.96 | 5.36 |
| FR4  | 3.62                   | 3.66 | 3.72 | 3.93 | 4.05 | 4.24 | 4.58 | 5    | 5.47 |
| FR5  | 3.74                   | 3.78 | 3.85 | 4.02 | 4.15 | 4.28 | 4.67 | 4.84 | 5.03 |
| FR6  | 3.72                   | 3.81 | 3.89 | 4.06 | 4.18 | 4.33 | 4.74 | 4.93 | 5.15 |
| FR7  | 3.99                   | 4.12 | 4.19 | 4.32 | 4.49 | 4.87 | 5.61 | 6.05 | 6.3  |
| FR8  | 4.35                   | 4.43 | 4.55 | 4.8  | 5.51 | 6.05 | 6.39 | 6.56 | 6.7  |
| FR9  | 5.12                   | 5.49 | 5.64 | 5.98 | 6.34 | 6.62 | 6.91 | 7.14 | 7.49 |
| FR10 | 4.69                   | 5.04 | 5.24 | 5.55 | 5.9  | 6.33 | 6.59 | 6.85 | 7.16 |
| FR11 | 4.18                   | 4.59 | 4.81 | 5.12 | 5.65 | 6.14 | 6.4  | 6.66 | 6.93 |
| MR1  | 4.18                   | 4.32 | 4.41 | 4.64 | 4.9  | 5.15 | 5.43 | 5.54 | 5.97 |
| MR2  | 4.22                   | 4.35 | 4.47 | 4.7  | 4.95 | 5.2  | 5.51 | 5.61 | 5.74 |
| MR3  | 4.19                   | 4.34 | 4.44 | 4.61 | 4.94 | 5.15 | 5.38 | 5.56 | 5.78 |
| MR4  | 4.35                   | 4.44 | 4.57 | 4.76 | 5.05 | 5.32 | 5.59 | 5.7  | 5.99 |
| MR5  | 2.2                    | 2.77 | 3.12 | 3.87 | 5.36 | 6.2  | 6.52 | 6.78 | 7.03 |
| MR6  | 6.14                   | 6.31 | 6.45 | 6.64 | 6.91 | 7.23 | 7.43 | 7.51 | 7.61 |
| LBR1 | 4.07                   | 4.82 | 5.1  | 5.5  | 5.8  | 6.1  | 6.32 | 6.54 | 6.7  |
| LBR2 | 4.29                   | 4.57 | 4.69 | 4.93 | 5.15 | 5.39 | 5.56 | 5.7  | 5.81 |
| LBR3 | 2.51                   | 2.66 | 2.8  | 3.02 | 3.3  | 3.64 | 3.82 | 3.91 | 4.06 |
| BR1  | 1.91                   | 2.32 | 2.81 | 3.52 | 4.12 | 4.69 | 4.92 | 5    | 5.07 |
| BR2  | 1.62                   | 1.98 | 2.18 | 2.57 | 3.04 | 3.63 | 3.93 | 4.02 | 4.14 |
| BR3  | 1.8                    | 2.03 | 2.14 | 2.3  | 2.55 | 3.02 | 3.47 | 3.6  | 3.82 |
| SCH1 | 2.24                   | 2.53 | 2.69 | 2.86 | 3.16 | 3.95 | 4.24 | 4.42 | 4.6  |
| SCH2 | 3.7                    | 3.8  | 3.91 | 4.12 | 4.28 | 4.41 | 4.53 | 4.6  | 4.69 |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.61 | 5.96 | 6.1  | 6.15 | 6.22 |
| StbR | 3.68                   | 4.31 | 4.53 | 5.07 | 5.62 | 6.01 | 6.3  | 6.39 | 6.62 |

Delta D.O. Percentiles for Critical Cells  
Baseline: WASP1997Existing  
Project: WASP-1997-Plan6a\_6ft

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |
|      | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1  | 0.02                  | 0.5   | 0.02  | 0.5   | 0.01  | 0.2   | 0     | 0.0   | -0.03 | -0.7  | -0.05 | -1.1  | -0.08 | -1.9  | -0.11 | -2.3  | -0.1  | -2.1  |
| FR2  | 0.08                  | 2.2   | 0.33  | 8.6   | 0.35  | 9.1   | 0.29  | 7.2   | 0.25  | 5.9   | 0.2   | 4.5   | 0.14  | 3.0   | 0.11  | 2.3   | -0.15 | -3.0  |
| FR3  | 0.12                  | 3.4   | 0.07  | 1.9   | 0.06  | 1.6   | 0.06  | 1.6   | -0.03 | -0.7  | -0.13 | -3.0  | -0.25 | -5.2  | -0.11 | -2.2  | -0.24 | -4.3  |
| FR4  | 0.12                  | 3.4   | 0.1   | 2.8   | 0.1   | 2.8   | 0.01  | 0.3   | -0.02 | -0.5  | -0.16 | -3.6  | -0.38 | -7.7  | -0.31 | -5.8  | -0.03 | -0.5  |
| FR6  | 0.12                  | 3.3   | 0.04  | 1.1   | -0.04 | -1.0  | -0.06 | -1.5  | -0.16 | -3.7  | -0.61 | -12.5 | -0.75 | -13.8 | -0.79 | -14.0 | -0.75 | -13.0 |
| FR6  | 0.03                  | 0.8   | 0.05  | 1.3   | 0     | 0.0   | -0.06 | -1.5  | -0.08 | -1.9  | -0.45 | -9.4  | -0.83 | -14.9 | -0.84 | -14.6 | -0.76 | -12.9 |
| FR7  | -0.18                 | -4.3  | -0.13 | -3.1  | -0.14 | -3.2  | -0.29 | -6.3  | -0.54 | -10.7 | -1.11 | -18.6 | -0.65 | -10.4 | -0.31 | -4.9  | -0.19 | -2.9  |
| FR8  | -0.31                 | -6.7  | -0.35 | -7.3  | -0.51 | -10.1 | -0.71 | -12.9 | -0.61 | -10.0 | -0.39 | -8.1  | -0.33 | -4.9  | -0.29 | -4.2  | -0.41 | -5.8  |
| FR9  | 0.24                  | 4.9   | 0.46  | 9.1   | 0.31  | 5.8   | 0.26  | 4.5   | 0.06  | 1.0   | 0.02  | 0.3   | 0.06  | 0.9   | 0.12  | 1.7   | 0.3   | 4.2   |
| FR10 | 0.38                  | 8.8   | 0.26  | 5.4   | 0.29  | 5.9   | 0.23  | 4.3   | -0.01 | -0.2  | -0.1  | -1.6  | -0.09 | -1.3  | -0.16 | -2.3  | -0.06 | -0.8  |
| FR11 | 0.01                  | 0.2   | -0.11 | -2.3  | -0.12 | -2.4  | -0.12 | -2.3  | -0.02 | -0.4  | 0     | 0.0   | -0.1  | -1.5  | 0.02  | 0.3   | -0.2  | -2.8  |
| MR1  | -0.23                 | -5.2  | -0.21 | -4.6  | -0.21 | -4.5  | -0.25 | -5.1  | -0.26 | -5.0  | -0.44 | -7.9  | -0.46 | -7.8  | -0.46 | -7.7  | -0.25 | -4.0  |
| MR2  | 0.19                  | 4.7   | 0.2   | 4.8   | 0.14  | 3.2   | 0.08  | 1.7   | -0.12 | -2.4  | -0.33 | -6.0  | -0.29 | -5.0  | -0.29 | -4.9  | -0.29 | -4.8  |
| MR3  | 0.49                  | 13.2  | 0.45  | 11.6  | 0.44  | 11.0  | 0.42  | 10.0  | 0.42  | 9.3   | 0.08  | 1.6   | -0.33 | -5.8  | -0.37 | -6.2  | -0.41 | -6.6  |
| MR4  | 0.46                  | 11.8  | 0.41  | 10.2  | 0.45  | 10.9  | 0.37  | 8.4   | 0.44  | 9.5   | 0.43  | 8.8   | 0.53  | 10.5  | 0.52  | 10.0  | 0.58  | 10.7  |
| MR5  | 0.71                  | 47.7  | 0.73  | 35.8  | 0.71  | 29.5  | 0.82  | 26.9  | 0.39  | 7.8   | -0.03 | -0.5  | -0.05 | -0.8  | -0.11 | -1.6  | -0.08 | -1.1  |
| MR6  | 4.03                  | 191.0 | 3.82  | 153.4 | 3.44  | 114.3 | 3.13  | 89.2  | 1.3   | 23.2  | 0.87  | 13.7  | 0.63  | 9.3   | 0.45  | 8.4   | 0.29  | 4.0   |
| LBR1 | 0.5                   | 14.0  | 0.47  | 10.8  | 0.35  | 7.4   | 0.37  | 7.2   | 0.37  | 6.8   | 0.46  | 8.2   | 0.35  | 5.9   | 0.38  | 6.2   | 0.23  | 3.6   |
| LBR2 | 0.6                   | 16.3  | 0.71  | 18.4  | 0.72  | 18.1  | 0.77  | 18.5  | 0.76  | 17.3  | 0.79  | 17.2  | 0.79  | 16.6  | 0.82  | 16.8  | 0.55  | 10.5  |
| LBR3 | -0.38                 | -13.1 | -0.62 | -18.9 | -0.67 | -19.3 | -0.66 | -17.9 | -0.65 | -16.5 | -0.7  | -16.1 | -0.91 | -19.2 | -1.08 | -21.6 | -1.18 | -22.5 |
| BR1  | -1.37                 | -41.8 | -1.09 | -32.0 | -0.76 | -21.3 | -0.22 | -5.9  | 0.15  | 3.8   | 0.49  | 11.7  | 0.49  | 11.1  | 0.47  | 10.4  | 0.43  | 9.3   |
| BR2  | -0.93                 | -36.5 | -0.86 | -30.3 | -0.61 | -27.1 | -0.67 | -20.7 | -0.4  | -11.6 | -0.07 | -1.9  | 0.09  | 2.3   | 0.09  | 2.3   | 0.11  | 2.7   |
| BR3  | -1.23                 | -40.6 | -1.23 | -37.7 | -1.3  | -37.8 | -1.32 | -36.5 | -1.23 | -32.5 | -0.93 | -23.5 | -0.81 | -15.0 | -0.55 | -13.3 | -0.43 | -10.1 |
| SCH1 | -0.15                 | -6.3  | -0.04 | -1.6  | 0.01  | 0.4   | 0.03  | 1.1   | 0.15  | 5.0   | 0.54  | 15.8  | 0.47  | 12.5  | 0.53  | 13.6  | 0.46  | 11.1  |
| SCH2 | -0.04                 | -1.1  | -0.11 | -2.8  | -0.1  | -2.5  | -0.02 | -0.5  | -0.05 | -1.2  | -0.06 | -1.3  | -0.07 | -1.5  | -0.08 | -1.7  | -0.13 | -2.7  |
| SR   | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |
| SubR | -0.16                 | -4.2  | 0.09  | 2.1   | -0.04 | -0.9  | 0.03  | 0.6   | -0.07 | -1.2  | -0.19 | -3.1  | -0.19 | -2.9  | -0.25 | -3.8  | -0.22 | -3.2  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period:                      Year 1997                      AUGUST 1 -AUGUST 31  
 Project Scenario: WASP-1997-Plan6a\_6ft

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.14                                  | 4.20 | 4.26 | 4.39 | 4.48 | 4.57 | 4.63 | 4.72 | 4.80 |
| FR2       | 3.98                                  | 4.01 | 4.04 | 4.27 | 4.38 | 4.50 | 4.58 | 4.62 | 4.68 |
| FR3       | 3.80                                  | 3.84 | 3.90 | 4.08 | 4.20 | 4.34 | 4.49 | 4.56 | 4.61 |
| FR4       | 3.76                                  | 3.78 | 3.80 | 4.03 | 4.10 | 4.23 | 4.51 | 4.63 | 4.82 |
| FR5       | 3.80                                  | 3.83 | 3.91 | 4.09 | 4.20 | 4.37 | 4.71 | 4.94 | 5.15 |
| FR6       | 3.94                                  | 3.96 | 4.00 | 4.22 | 4.30 | 4.53 | 5.02 | 5.29 | 5.46 |
| FR7       | 4.24                                  | 4.33 | 4.41 | 4.62 | 5.10 | 5.68 | 6.08 | 6.23 | 6.39 |
| FR8       | 4.51                                  | 4.66 | 4.73 | 5.02 | 5.61 | 6.11 | 6.41 | 6.51 | 6.62 |
| FR9       | 5.05                                  | 5.25 | 5.43 | 5.78 | 6.27 | 6.60 | 6.84 | 7.03 | 7.16 |
| FR10      | 5.47                                  | 5.76 | 5.90 | 6.16 | 6.47 | 6.73 | 7.08 | 7.18 | 7.25 |
| FR11      | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.50 | 5.76 | 6.00 | 6.12 | 6.30 |
| MR1       | 4.28                                  | 4.39 | 4.53 | 4.69 | 4.93 | 5.14 | 5.38 | 5.48 | 5.70 |
| MR2       | 4.25                                  | 4.40 | 4.54 | 4.73 | 4.94 | 5.12 | 5.41 | 5.54 | 5.63 |
| MR3       | 4.31                                  | 4.40 | 4.51 | 4.72 | 4.96 | 5.14 | 5.32 | 5.39 | 5.55 |
| MR4       | 4.76                                  | 4.91 | 5.02 | 5.22 | 5.52 | 5.75 | 5.96 | 6.16 | 6.31 |
| MR5       | 3.25                                  | 3.52 | 3.92 | 4.38 | 5.61 | 6.19 | 6.49 | 6.75 | 6.95 |
| MR6       | 2.93                                  | 3.21 | 3.42 | 3.71 | 4.21 | 4.67 | 4.88 | 5.03 | 5.14 |
| LBR1      | 4.62                                  | 4.94 | 5.01 | 5.26 | 5.49 | 5.72 | 5.95 | 6.08 | 6.17 |
| LBR2      | 4.31                                  | 4.41 | 4.51 | 4.72 | 4.95 | 5.15 | 5.31 | 5.41 | 5.53 |
| LBR3      | 3.33                                  | 3.45 | 3.56 | 3.74 | 3.96 | 4.17 | 4.36 | 4.42 | 4.56 |
| BR1       | 2.68                                  | 3.34 | 3.67 | 4.06 | 4.29 | 4.51 | 4.65 | 4.69 | 4.82 |
| BR2       | 2.02                                  | 2.21 | 2.37 | 2.78 | 3.33 | 3.76 | 4.06 | 4.18 | 4.37 |
| BR3       | 2.28                                  | 2.40 | 2.48 | 2.60 | 2.75 | 2.89 | 3.02 | 3.07 | 3.13 |
| SCh1      | 3.39                                  | 3.51 | 3.58 | 3.73 | 3.82 | 3.92 | 3.99 | 4.06 | 4.14 |
| SCh2      | 3.93                                  | 4.02 | 4.07 | 4.22 | 4.34 | 4.44 | 4.52 | 4.56 | 4.66 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR      | 4.68                                  | 4.88 | 5.01 | 5.28 | 5.59 | 5.82 | 5.96 | 6.05 | 6.18 |

Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 - AUGUST 31

Baseline scenario: WASP1997Existing

Project/ario: WASP-1997-Plan6a\_6ft

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1       | 0.02                                 | 0.00  | 0.00  | 0.01  | -0.02 | -0.02 | -0.09 | -0.07 | -0.05 |  | 0.4                                        | 0.1   | 0.0   | 0.3   | -0.4  | -0.4  | -1.9  | -1.5  | -1.0  |  |
| FR2       | 0.04                                 | 0.01  | 0.01  | 0.01  | 0.00  | -0.04 | -0.06 | -0.07 | -0.08 |  | 1.0                                        | 0.3   | 0.2   | 0.3   | 0.1   | -0.9  | -1.4  | -1.4  | -1.6  |  |
| FR3       | 0.10                                 | 0.07  | 0.06  | 0.06  | 0.01  | -0.04 | -0.23 | -0.23 | -0.38 |  | 2.8                                        | 1.9   | 1.7   | 1.4   | 0.2   | -0.9  | -4.8  | -4.8  | -7.5  |  |
| FR4       | 0.10                                 | 0.07  | 0.06  | 0.04  | -0.02 | -0.14 | -0.43 | -0.67 | -0.72 |  | 3.2                                        | 1.9   | 1.5   | 1.1   | -0.5  | -3.2  | -8.7  | -12.7 | -13.1 |  |
| FR5       | 0.12                                 | 0.07  | 0.03  | 0.01  | -0.08 | -0.40 | -0.70 | -0.71 | -0.65 |  | 3.2                                        | 1.9   | 0.8   | 0.2   | -1.8  | -8.3  | -12.9 | -12.5 | -11.2 |  |
| FR6       | -0.02                                | -0.05 | -0.11 | -0.10 | -0.25 | -0.67 | -0.76 | -0.63 | -0.59 |  | -0.6                                       | -1.2  | -2.7  | -2.4  | -5.4  | -12.8 | -13.1 | -10.7 | -9.7  |  |
| FR7       | -0.20                                | -0.22 | -0.28 | -0.47 | -0.75 | -0.51 | -0.34 | -0.34 | -0.31 |  | -4.5                                       | -4.7  | -5.9  | -9.1  | -12.9 | -8.2  | -5.3  | -5.1  | -4.6  |  |
| FR8       | -0.35                                | -0.40 | -0.55 | -0.64 | -0.54 | -0.32 | -0.27 | -0.30 | -0.35 |  | -7.2                                       | -7.8  | -10.5 | -11.2 | -8.8  | -5.0  | -4.0  | -4.4  | -5.1  |  |
| FR9       | -0.62                                | -0.66 | -0.59 | -0.48 | -0.27 | -0.21 | -0.23 | -0.20 | -0.18 |  | -11.0                                      | -11.1 | -9.8  | -7.7  | -4.1  | -3.1  | -3.3  | -2.7  | -2.5  |  |
| FR10      | -0.25                                | -0.09 | -0.11 | -0.14 | -0.09 | -0.08 | -0.09 | -0.06 | -0.07 |  | -4.3                                       | -1.6  | -1.9  | -2.2  | -1.4  | -1.2  | -1.2  | -0.8  | -1.0  |  |
| FR11      | -0.33                                | -0.35 | -0.37 | -0.40 | -0.38 | -0.42 | -0.45 | -0.44 | -0.38 |  | -6.9                                       | -6.9  | -7.0  | -7.2  | -6.5  | -6.7  | -7.0  | -6.7  | -5.7  |  |
| MR1       | -0.20                                | -0.19 | -0.17 | -0.20 | -0.24 | -0.40 | -0.47 | -0.48 | -0.34 |  | -4.6                                       | -4.2  | -3.7  | -4.1  | -4.7  | -7.2  | -8.0  | -8.1  | -5.7  |  |
| MR2       | 0.05                                 | 0.09  | 0.03  | -0.05 | -0.18 | -0.37 | -0.40 | -0.37 | -0.40 |  | 1.3                                        | 2.1   | 0.6   | -1.1  | -3.6  | -6.8  | -6.8  | -6.3  | -6.7  |  |
| MR3       | 0.46                                 | 0.36  | 0.41  | 0.34  | 0.22  | -0.08 | -0.27 | -0.33 | -0.30 |  | 11.9                                       | 9.0   | 9.9   | 7.7   | 4.6   | -1.6  | -4.8  | -5.8  | -5.2  |  |
| MR4       | 0.37                                 | 0.41  | 0.40  | 0.43  | 0.46  | 0.51  | 0.52  | 0.62  | 0.61  |  | 8.4                                        | 9.0   | 8.8   | 9.1   | 9.2   | 9.7   | 9.6   | 11.2  | 10.7  |  |
| MR5       | 0.93                                 | 0.97  | 0.95  | 0.92  | 0.28  | 0.03  | -0.03 | -0.07 | -0.06 |  | 40.4                                       | 37.9  | 32.1  | 26.5  | 5.2   | 0.5   | -0.5  | -1.0  | -0.8  |  |
| MR6       | 0.78                                 | 0.68  | 0.37  | 0.13  | -1.48 | -1.65 | -1.92 | -1.91 | -2.14 |  | 36.4                                       | 26.8  | 12.0  | 3.7   | -25.9 | -26.1 | -28.2 | -27.5 | -28.4 |  |
| LBR1      | 0.32                                 | 0.44  | 0.42  | 0.47  | 0.50  | 0.53  | 0.66  | 0.63  | 0.60  |  | 7.5                                        | 9.9   | 9.2   | 9.7   | 10.0  | 10.2  | 12.4  | 11.6  | 10.8  |  |
| LBR2      | 0.62                                 | 0.61  | 0.55  | 0.58  | 0.60  | 0.60  | 0.60  | 0.64  | 0.63  |  | 16.7                                       | 16.0  | 13.9  | 14.1  | 13.8  | 13.2  | 12.8  | 13.5  | 12.9  |  |
| LBR3      | -0.21                                | -0.13 | -0.09 | -0.05 | 0.01  | 0.07  | 0.12  | 0.07  | 0.10  |  | -5.9                                       | -3.7  | -2.6  | -1.2  | 0.3   | 1.6   | 2.9   | 1.7   | 2.2   |  |
| BR1       | -0.84                                | -0.24 | 0.03  | 0.16  | 0.26  | 0.30  | 0.22  | 0.19  | 0.22  |  | -23.9                                      | -6.8  | 0.9   | 4.1   | 6.4   | 7.0   | 5.0   | 4.2   | 4.7   |  |
| BR2       | -1.28                                | -1.17 | -1.09 | -0.83 | -0.49 | -0.23 | -0.09 | -0.12 | -0.02 |  | -38.8                                      | -34.7 | -31.5 | -23.1 | -12.8 | -5.6  | -2.1  | -2.7  | -0.4  |  |
| BR3       | -1.17                                | -1.11 | -1.08 | -1.03 | -0.99 | -0.96 | -0.95 | -0.92 | -0.89 |  | -34.0                                      | -31.5 | -30.3 | -28.3 | -26.5 | -24.8 | -23.9 | -23.1 | -22.2 |  |
| SCh1      | -0.12                                | -0.05 | -0.05 | 0.01  | -0.01 | -0.03 | -0.04 | -0.04 | -0.03 |  | -3.3                                       | -1.4  | -1.3  | 0.2   | -0.2  | -0.8  | -1.1  | -0.9  | -0.7  |  |
| SCh2      | -0.01                                | -0.02 | -0.02 | -0.03 | -0.04 | -0.06 | -0.09 | -0.09 | -0.07 |  | -0.2                                       | -0.4  | -0.5  | -0.6  | -0.9  | -1.2  | -1.9  | -1.8  | -1.5  |  |
| SR        | 0.00                                 | 0.00  | 0.00  | -0.01 | 0.00  | 0.00  | -0.01 | 0.00  | 0.00  |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR      | -0.07                                | -0.05 | -0.08 | -0.16 | -0.20 | -0.27 | -0.34 | -0.38 | -0.38 |  | -1.4                                       | -1.0  | -1.5  | -2.9  | -3.5  | -4.5  | -5.4  | -5.9  | -5.7  |  |

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# **48 ft Channel Depth**

*Mitigation Plan 6a*

*D.O. Mitigation*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
**Scenario: 6A6ft-withDOmitigation**

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |       |
|------|------------------------|------|------|------|------|------|------|------|-------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%   |
| FR1  | 4.02                   | 4.07 | 4.12 | 4.32 | 4.46 | 4.61 | 4.7  | 4.73 | 4.85  |
| FR2  | 3.89                   | 3.99 | 4.06 | 4.31 | 4.49 | 4.64 | 4.89 | 4.96 | 5.01  |
| FR3  | 3.78                   | 3.84 | 3.9  | 4.16 | 4.32 | 4.53 | 5.07 | 5.64 | 6.09  |
| FR4  | 3.8                    | 3.85 | 3.91 | 4.18 | 4.34 | 4.57 | 5.03 | 5.56 | 6.14  |
| FR5  | 3.93                   | 3.99 | 4.07 | 4.31 | 4.48 | 4.72 | 5.27 | 5.55 | 5.76  |
| FR6  | 3.91                   | 4.05 | 4.15 | 4.39 | 4.55 | 4.81 | 5.39 | 5.65 | 5.95  |
| FR7  | 4.32                   | 4.47 | 4.55 | 4.77 | 5.02 | 5.59 | 6.51 | 6.98 | 7.36  |
| FR8  | 4.82                   | 4.95 | 5.15 | 5.46 | 6.73 | 8.12 | 9.16 | 9.65 | 10.06 |
| FR9  | 5.59                   | 6.21 | 6.44 | 6.79 | 7.45 | 8.18 | 8.78 | 9.09 | 10.65 |
| FR10 | 4.69                   | 5.04 | 5.24 | 5.55 | 5.9  | 6.33 | 6.59 | 6.85 | 7.15  |
| FR11 | 4.18                   | 4.59 | 4.81 | 5.12 | 5.65 | 6.14 | 6.4  | 6.66 | 6.93  |
| MR1  | 4.57                   | 4.76 | 4.93 | 5.2  | 5.53 | 5.84 | 6.21 | 6.33 | 6.55  |
| MR2  | 4.48                   | 4.61 | 4.73 | 5.02 | 5.39 | 5.79 | 6.05 | 6.28 | 6.45  |
| MR3  | 4.38                   | 4.5  | 4.62 | 4.83 | 5.15 | 5.48 | 5.75 | 5.9  | 6.23  |
| MR4  | 4.49                   | 4.63 | 4.7  | 4.91 | 5.17 | 5.39 | 5.61 | 5.7  | 5.99  |
| MR5  | 2.2                    | 2.77 | 3.12 | 3.87 | 5.36 | 6.2  | 6.52 | 6.78 | 7.03  |
| MR6  | 6.14                   | 6.31 | 6.45 | 6.64 | 6.91 | 7.23 | 7.43 | 7.51 | 7.61  |
| LBR1 | 4.07                   | 4.82 | 5.1  | 5.5  | 5.8  | 6.1  | 6.32 | 6.54 | 6.7   |
| LBR2 | 4.29                   | 4.57 | 4.69 | 4.93 | 5.15 | 5.39 | 5.56 | 5.7  | 5.81  |
| LBR3 | 2.57                   | 2.66 | 2.8  | 3.03 | 3.3  | 3.64 | 3.82 | 3.91 | 4.06  |
| BR1  | 2.87                   | 3.57 | 3.89 | 4.47 | 4.81 | 5.2  | 5.48 | 5.59 | 5.71  |
| BR2  | 2.36                   | 2.62 | 2.8  | 3.49 | 4.28 | 4.68 | 4.84 | 5.01 | 5.26  |
| BR3  | 2.3                    | 2.41 | 2.47 | 2.54 | 2.72 | 2.95 | 3.26 | 3.48 | 3.73  |
| SCH1 | 2.42                   | 2.72 | 2.86 | 3.04 | 3.32 | 4.07 | 4.31 | 4.48 | 4.64  |
| SCH2 | 3.92                   | 4.06 | 4.16 | 4.35 | 4.52 | 4.66 | 4.76 | 4.85 | 4.93  |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.61 | 5.96 | 6.1  | 6.15 | 6.22  |
| StbR | 4.09                   | 4.89 | 5.32 | 6.07 | 7.02 | 7.86 | 8.46 | 8.76 | 9.2   |



Delta D.O. Percentiles for Critical Cells  
Baseline: WASP1997Existing  
Project: Scenario: 6ASft-withDomitigation

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       |
|      | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1  | 0.1                   | 2.6   | 0.08  | 2.0   | 0.07  | 1.7   | 2.4   | 0.08  | 1.8   | 0.09  | 2.0   | 0.07  |
| FR2  | 0.23                  | 6.3   | 0.23  | 6.1   | 0.22  | 5.7   | 0.28  | 6.9   | 0.27  | 6.4   | 5.5   | 0.27  |
| FR3  | 0.29                  | 8.3   | 0.25  | 7.0   | 0.26  | 7.1   | 0.29  | 7.5   | 0.27  | 6.7   | 0.24  | 5.6   |
| FR4  | 0.3                   | 8.6   | 0.29  | 8.1   | 0.29  | 8.0   | 0.26  | 6.6   | 0.27  | 6.6   | 0.17  | 3.9   |
| FR6  | 0.31                  | 8.6   | 0.25  | 6.7   | 0.18  | 4.6   | 0.23  | 5.6   | 0.17  | 3.9   | -0.17 | -3.5  |
| FR6  | 0.22                  | 6.0   | 0.29  | 7.7   | 0.26  | 6.7   | 0.27  | 6.6   | 0.29  | 6.8   | 0.03  | 0.6   |
| FR7  | 0.15                  | 3.6   | 0.22  | 5.2   | 0.22  | 5.1   | 0.16  | 3.5   | -0.01 | -0.2  | -0.39 | -6.5  |
| FR8  | 0.16                  | 3.4   | 0.17  | 3.6   | 0.09  | 1.8   | -0.05 | -0.9  | 0.61  | 10.0  | 1.68  | 26.1  |
| FR9  | 0.71                  | 14.5  | 1.18  | 23.5  | 1.11  | 20.8  | 1.07  | 18.7  | 1.17  | 18.6  | 1.58  | 23.9  |
| FR10 | 0.38                  | 8.8   | 0.26  | 5.4   | 0.29  | 5.8   | 0.23  | 4.3   | -0.01 | -0.2  | -0.1  | -1.6  |
| FR11 | 0.01                  | 0.2   | -0.11 | -2.3  | -0.12 | -2.4  | -0.12 | -2.3  | -0.02 | -0.4  | 0     | 0.0   |
| MR1  | 0.16                  | 3.6   | 0.23  | 5.1   | 0.31  | 6.7   | 0.31  | 6.3   | 0.37  | 7.2   | 0.25  | 4.5   |
| MR2  | 0.45                  | 11.2  | 0.46  | 11.1  | 0.4   | 9.2   | 0.4   | 8.7   | 0.32  | 6.3   | 0.26  | 4.7   |
| MR3  | 0.68                  | 18.4  | 0.61  | 15.7  | 0.62  | 15.5  | 0.64  | 15.3  | 0.63  | 13.9  | 0.41  | 8.1   |
| MR4  | 0.6                   | 15.4  | 0.6   | 14.9  | 0.58  | 14.1  | 0.52  | 11.8  | 0.56  | 12.1  | 0.5   | 10.2  |
| MR6  | 0.71                  | 47.7  | 0.73  | 35.8  | 0.71  | 29.5  | 0.82  | 26.9  | 0.39  | 7.8   | -0.03 | -0.5  |
| MR6  | 4.03                  | 191.0 | 3.82  | 153.4 | 3.44  | 114.3 | 3.13  | 89.2  | 1.3   | 23.2  | 0.87  | 13.7  |
| LBR1 | 0.5                   | 14.0  | 0.47  | 10.8  | 0.35  | 7.4   | 0.37  | 7.2   | 0.37  | 6.8   | 0.46  | 8.2   |
| LBR2 | 0.6                   | 16.3  | 0.71  | 18.4  | 0.72  | 18.1  | 0.77  | 18.5  | 0.76  | 17.3  | 0.79  | 17.2  |
| LBR3 | -0.32                 | -11.1 | -0.62 | -18.9 | -0.67 | -19.3 | -0.85 | -17.7 | -0.65 | -16.5 | -0.7  | -16.1 |
| BR1  | -0.41                 | -12.5 | 0.16  | 4.7   | 0.32  | 9.0   | 0.73  | 19.5  | 0.84  | 21.2  | 1     | 23.8  |
| BR2  | -0.19                 | -7.5  | -0.22 | -7.7  | -0.19 | -6.4  | 0.25  | 7.7   | 0.84  | 24.4  | 0.98  | 26.5  |
| BR3  | -0.73                 | -24.1 | -0.85 | -26.1 | -0.97 | -28.2 | -1.08 | -29.8 | -1.06 | -28.0 | -1    | -25.3 |
| SCH1 | 0.03                  | 1.3   | 0.15  | 5.8   | 0.18  | 6.7   | 0.21  | 7.4   | 0.31  | 10.3  | 0.66  | 19.4  |
| SCH2 | 0.18                  | 4.8   | 0.15  | 3.6   | 0.15  | 3.7   | 0.21  | 5.1   | 0.19  | 4.4   | 0.19  | 4.3   |
| SR   | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |
| SbR  | 0.25                  | 6.5   | 0.67  | 15.9  | 0.75  | 16.4  | 1.03  | 20.4  | 1.33  | 23.4  | 1.66  | 26.8  |

**D.O. %-tiles for zones of Savannah Estuary**

Simulation Period:            Year 1997            AUGUST 1 -AUGUST 31  
 Project:enario: 6A6ft-withDOmitigation

| Zone<br>Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|--------------|---------------------------------------|------|------|------|------|------|------|------|------|
|              | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1          | 4.18                                  | 4.23 | 4.29 | 4.45 | 4.56 | 4.63 | 4.68 | 4.76 | 4.82 |
| FR2          | 4.11                                  | 4.13 | 4.16 | 4.45 | 4.58 | 4.74 | 4.87 | 4.93 | 4.98 |
| FR3          | 3.96                                  | 4.02 | 4.07 | 4.33 | 4.47 | 4.63 | 4.94 | 5.00 | 5.05 |
| FR4          | 3.95                                  | 3.97 | 4.01 | 4.29 | 4.43 | 4.58 | 5.01 | 5.22 | 5.48 |
| FR5          | 4.00                                  | 4.06 | 4.17 | 4.40 | 4.56 | 4.84 | 5.32 | 5.64 | 5.94 |
| FR6          | 4.21                                  | 4.26 | 4.33 | 4.60 | 4.75 | 5.10 | 5.76 | 6.16 | 6.33 |
| FR7          | 4.64                                  | 4.77 | 4.93 | 5.19 | 5.90 | 6.65 | 7.22 | 7.38 | 7.51 |
| FR8          | 5.07                                  | 5.26 | 5.40 | 5.75 | 6.98 | 7.98 | 8.83 | 9.05 | 9.32 |
| FR9          | 6.58                                  | 6.92 | 7.25 | 7.52 | 8.06 | 8.49 | 8.77 | 9.03 | 9.19 |
| FR10         | 5.47                                  | 5.76 | 5.91 | 6.18 | 6.53 | 6.81 | 7.16 | 7.30 | 7.69 |
| FR11         | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.50 | 5.76 | 6.00 | 6.12 | 6.30 |
| MR1          | 4.69                                  | 4.86 | 5.03 | 5.24 | 5.52 | 5.81 | 6.06 | 6.31 | 6.44 |
| MR2          | 4.58                                  | 4.69 | 4.88 | 5.17 | 5.47 | 5.74 | 6.06 | 6.29 | 6.41 |
| MR3          | 4.47                                  | 4.59 | 4.73 | 4.90 | 5.17 | 5.47 | 5.67 | 5.88 | 6.05 |
| MR4          | 4.83                                  | 4.94 | 5.06 | 5.26 | 5.54 | 5.78 | 5.98 | 6.16 | 6.31 |
| MR5          | 3.25                                  | 3.52 | 3.92 | 4.38 | 5.61 | 6.19 | 6.49 | 6.75 | 6.95 |
| MR6          | 2.93                                  | 3.21 | 3.42 | 3.71 | 4.21 | 4.67 | 4.88 | 5.03 | 5.14 |
| LBR1         | 4.62                                  | 4.94 | 5.01 | 5.26 | 5.49 | 5.72 | 5.95 | 6.08 | 6.17 |
| LBR2         | 4.31                                  | 4.41 | 4.51 | 4.72 | 4.95 | 5.16 | 5.31 | 5.41 | 5.53 |
| LBR3         | 3.33                                  | 3.45 | 3.56 | 3.74 | 3.96 | 4.18 | 4.37 | 4.42 | 4.56 |
| BR1          | 4.13                                  | 4.47 | 4.64 | 4.78 | 4.97 | 5.18 | 5.30 | 5.35 | 5.43 |
| BR2          | 2.70                                  | 3.00 | 3.24 | 3.76 | 4.34 | 4.75 | 4.91 | 4.98 | 5.10 |
| BR3          | 2.68                                  | 2.74 | 2.80 | 2.91 | 3.05 | 3.22 | 3.34 | 3.45 | 3.61 |
| SCh1         | 3.55                                  | 3.67 | 3.74 | 3.89 | 4.00 | 4.07 | 4.13 | 4.19 | 4.24 |
| SCh2         | 4.13                                  | 4.22 | 4.26 | 4.45 | 4.56 | 4.65 | 4.74 | 4.77 | 4.83 |
| SR           | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR         | 5.15                                  | 5.54 | 5.78 | 6.25 | 6.76 | 7.21 | 7.51 | 7.62 | 7.81 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline snario: WASP1997Existing

Project arrio: 6A6ft-withDOmitigation

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1       | 0.05                                 | 0.04  | 0.03  | 0.08  | 0.06  | 0.04  | -0.04 | -0.04 | -0.02 |  | 1.2                                        | 0.9   | 0.8   | 1.7   | 1.4   | 0.9   | -0.9  | -0.9  | -0.5  |  |
| FR2       | 0.16                                 | 0.13  | 0.13  | 0.19  | 0.20  | 0.20  | 0.22  | 0.24  | 0.22  |  | 4.2                                        | 3.4   | 3.2   | 4.6   | 4.7   | 4.4   | 4.7   | 5.1   | 4.7   |  |
| FR3       | 0.27                                 | 0.25  | 0.23  | 0.30  | 0.28  | 0.24  | 0.23  | 0.21  | 0.06  |  | 7.2                                        | 6.6   | 6.1   | 7.4   | 6.7   | 5.6   | 4.9   | 4.4   | 1.1   |  |
| FR4       | 0.29                                 | 0.26  | 0.26  | 0.31  | 0.30  | 0.21  | 0.08  | -0.08 | -0.06 |  | 8.0                                        | 7.1   | 7.0   | 7.7   | 7.4   | 4.8   | 1.7   | -1.6  | -1.1  |  |
| FR5       | 0.32                                 | 0.30  | 0.29  | 0.32  | 0.29  | 0.07  | -0.09 | 0.00  | 0.14  |  | 8.7                                        | 7.9   | 7.4   | 7.8   | 6.7   | 1.6   | -1.7  | 0.0   | 2.4   |  |
| FR6       | 0.25                                 | 0.25  | 0.21  | 0.28  | 0.20  | -0.10 | -0.01 | 0.24  | 0.29  |  | 6.4                                        | 6.3   | 5.2   | 6.4   | 4.5   | -1.9  | -0.2  | 4.0   | 4.8   |  |
| FR7       | 0.20                                 | 0.22  | 0.24  | 0.10  | 0.05  | 0.46  | 0.80  | 0.82  | 0.81  |  | 4.4                                        | 4.9   | 5.1   | 1.9   | 0.8   | 7.5   | 12.5  | 12.4  | 12.1  |  |
| FR8       | 0.21                                 | 0.21  | 0.11  | 0.09  | 0.83  | 1.54  | 2.16  | 2.25  | 2.35  |  | 4.4                                        | 4.1   | 2.1   | 1.6   | 13.4  | 24.0  | 32.3  | 33.0  | 33.6  |  |
| FR9       | 0.91                                 | 1.02  | 1.23  | 1.26  | 1.52  | 1.68  | 1.70  | 1.80  | 1.85  |  | 16.1                                       | 17.2  | 20.5  | 20.2  | 23.3  | 24.7  | 24.1  | 25.0  | 25.2  |  |
| FR10      | -0.25                                | -0.09 | -0.10 | -0.12 | -0.04 | 0.00  | 0.00  | 0.06  | 0.37  |  | -4.3                                       | -1.6  | -1.7  | -2.0  | -0.5  | 0.0   | 0.0   | 0.8   | 5.0   |  |
| FR11      | -0.33                                | -0.35 | -0.37 | -0.40 | -0.38 | -0.42 | -0.45 | -0.44 | -0.38 |  | -6.9                                       | -6.9  | -7.0  | -7.2  | -6.5  | -6.7  | -7.0  | -6.7  | -5.7  |  |
| MR1       | 0.21                                 | 0.28  | 0.33  | 0.35  | 0.35  | 0.27  | 0.22  | 0.34  | 0.40  |  | 4.6                                        | 6.1   | 7.0   | 7.2   | 6.7   | 4.9   | 3.7   | 5.7   | 6.6   |  |
| MR2       | 0.39                                 | 0.37  | 0.37  | 0.39  | 0.34  | 0.25  | 0.25  | 0.39  | 0.38  |  | 9.3                                        | 8.6   | 8.3   | 8.0   | 6.7   | 4.5   | 4.4   | 6.5   | 6.4   |  |
| MR3       | 0.61                                 | 0.56  | 0.63  | 0.52  | 0.43  | 0.25  | 0.08  | 0.16  | 0.20  |  | 15.9                                       | 13.8  | 15.3  | 11.9  | 9.1   | 4.7   | 1.5   | 2.8   | 3.4   |  |
| MR4       | 0.44                                 | 0.43  | 0.44  | 0.48  | 0.48  | 0.53  | 0.54  | 0.62  | 0.61  |  | 10.1                                       | 9.6   | 9.6   | 9.9   | 9.5   | 10.1  | 9.9   | 11.2  | 10.8  |  |
| MR5       | 0.93                                 | 0.97  | 0.96  | 0.92  | 0.28  | 0.03  | -0.03 | -0.07 | -0.06 |  | 40.4                                       | 37.9  | 32.2  | 26.5  | 5.2   | 0.5   | -0.5  | -1.0  | -0.8  |  |
| MR6       | 0.79                                 | 0.68  | 0.37  | 0.13  | -1.48 | -1.65 | -1.92 | -1.91 | -2.14 |  | 36.6                                       | 26.8  | 12.0  | 3.7   | -25.9 | -26.1 | -28.2 | -27.5 | -29.4 |  |
| LBR1      | 0.32                                 | 0.44  | 0.42  | 0.47  | 0.50  | 0.53  | 0.66  | 0.63  | 0.60  |  | 7.5                                        | 9.9   | 9.2   | 9.7   | 10.0  | 10.2  | 12.4  | 11.6  | 10.8  |  |
| LBR2      | 0.62                                 | 0.61  | 0.55  | 0.59  | 0.60  | 0.60  | 0.60  | 0.64  | 0.63  |  | 16.7                                       | 16.0  | 13.9  | 14.2  | 13.8  | 13.2  | 12.8  | 13.5  | 12.9  |  |
| LBR3      | -0.21                                | -0.13 | -0.09 | -0.04 | 0.01  | 0.07  | 0.13  | 0.07  | 0.10  |  | -5.9                                       | -3.7  | -2.6  | -1.2  | 0.4   | 1.6   | 2.9   | 1.7   | 2.2   |  |
| BR1       | 0.61                                 | 0.89  | 1.00  | 0.88  | 0.94  | 0.96  | 0.87  | 0.85  | 0.83  |  | 17.2                                       | 24.8  | 27.5  | 22.7  | 23.2  | 22.8  | 19.7  | 18.8  | 18.0  |  |
| BR2       | -0.60                                | -0.38 | -0.22 | 0.15  | 0.53  | 0.76  | 0.76  | 0.69  | 0.71  |  | -18.2                                      | -11.2 | -6.4  | 4.1   | 13.8  | 19.2  | 18.4  | 16.0  | 16.1  |  |
| BR3       | -0.78                                | -0.77 | -0.76 | -0.72 | -0.69 | -0.63 | -0.63 | -0.54 | -0.41 |  | -22.6                                      | -21.9 | -21.3 | -19.7 | -18.3 | -16.5 | -15.9 | -13.5 | -10.1 |  |
| SCh1      | 0.05                                 | 0.11  | 0.12  | 0.17  | 0.17  | 0.12  | 0.09  | 0.09  | 0.08  |  | 1.3                                        | 3.1   | 3.2   | 4.4   | 4.4   | 3.0   | 2.3   | 2.2   | 1.8   |  |
| SCh2      | 0.19                                 | 0.17  | 0.17  | 0.20  | 0.18  | 0.16  | 0.13  | 0.13  | 0.11  |  | 4.9                                        | 4.3   | 4.0   | 4.7   | 4.2   | 3.5   | 2.9   | 2.7   | 2.3   |  |
| SR        | 0.00                                 | 0.00  | 0.00  | -0.01 | 0.00  | 0.00  | -0.01 | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR      | 0.40                                 | 0.61  | 0.69  | 0.82  | 0.97  | 1.12  | 1.21  | 1.19  | 1.26  |  | 8.5                                        | 12.3  | 13.6  | 15.0  | 16.8  | 18.3  | 19.2  | 18.5  | 19.1  |  |

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## **47 ft Channel Depth**

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
 Scenario: WASP-1997-5ftonly

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.94                   | 4.01 | 4.06 | 4.22 | 4.35 | 4.47 | 4.56 | 4.6  | 4.65 |
| FR2  | 3.66                   | 3.74 | 3.83 | 4    | 4.15 | 4.3  | 4.44 | 4.49 | 4.57 |
| FR3  | 3.51                   | 3.57 | 3.63 | 3.83 | 3.95 | 4.11 | 4.45 | 4.8  | 5.34 |
| FR4  | 3.53                   | 3.59 | 3.65 | 3.85 | 3.97 | 4.12 | 4.45 | 4.77 | 5.45 |
| FR5  | 3.68                   | 3.72 | 3.78 | 3.94 | 4.08 | 4.22 | 4.63 | 4.95 | 5.07 |
| FR6  | 3.7                    | 3.79 | 3.86 | 3.99 | 4.12 | 4.3  | 4.76 | 5.05 | 5.28 |
| FR7  | 4.48                   | 4.53 | 4.65 | 4.9  | 5.48 | 5.99 | 6.35 | 6.6  | 7.11 |
| FR8  | 4.41                   | 4.49 | 4.61 | 4.9  | 5.7  | 6.22 | 6.51 | 6.62 | 6.78 |
| FR9  | 5.26                   | 5.62 | 5.78 | 6.12 | 6.39 | 6.71 | 6.97 | 7.2  | 7.48 |
| FR10 | 4.34                   | 4.81 | 4.97 | 5.32 | 5.9  | 6.42 | 6.69 | 7.01 | 7.22 |
| FR11 | 4.24                   | 4.65 | 4.95 | 5.25 | 5.65 | 6.14 | 6.52 | 6.66 | 7.16 |
| MR1  | 4.26                   | 4.32 | 4.4  | 4.63 | 4.91 | 5.17 | 5.43 | 5.59 | 5.97 |
| MR2  | 3.99                   | 4.11 | 4.27 | 4.53 | 4.89 | 5.24 | 5.49 | 5.61 | 5.78 |
| MR3  | 3.8                    | 3.98 | 4.03 | 4.34 | 4.68 | 5.11 | 5.43 | 5.57 | 5.68 |
| MR4  | 3.92                   | 4.12 | 4.23 | 4.48 | 4.74 | 5.07 | 5.27 | 5.41 | 5.64 |
| MR5  | 1.5                    | 2.03 | 2.49 | 3.09 | 4.86 | 6.24 | 6.57 | 6.92 | 7.11 |
| MR6  | 2.12                   | 2.55 | 3.03 | 3.59 | 5.59 | 6.38 | 6.81 | 7.07 | 7.34 |
| LBR1 | 3.54                   | 4.35 | 4.78 | 5.21 | 5.45 | 5.69 | 5.99 | 6.18 | 6.5  |
| LBR2 | 3.66                   | 3.86 | 4    | 4.18 | 4.41 | 4.59 | 4.81 | 4.96 | 5.32 |
| LBR3 | 3.16                   | 3.41 | 3.55 | 3.87 | 4.19 | 4.61 | 4.86 | 5.03 | 5.26 |
| BR1  | 3.27                   | 3.41 | 3.55 | 3.71 | 3.94 | 4.16 | 4.36 | 4.43 | 4.61 |
| BR2  | 2.55                   | 2.8  | 3    | 3.22 | 3.43 | 3.66 | 3.84 | 3.91 | 4.02 |
| BR3  | 3.01                   | 3.2  | 3.34 | 3.51 | 3.7  | 3.87 | 4.02 | 4.08 | 4.2  |
| SCH1 | 2.38                   | 2.55 | 2.74 | 2.89 | 3.07 | 3.3  | 3.64 | 3.74 | 3.95 |
| SCH2 | 3.68                   | 3.81 | 3.91 | 4.12 | 4.29 | 4.43 | 4.57 | 4.64 | 4.72 |
| SR   | 4.69                   | 4.74 | 4.97 | 5.31 | 5.62 | 5.97 | 6.11 | 6.16 | 6.23 |
| StbR | 3.56                   | 4.27 | 4.54 | 5.1  | 5.62 | 6.03 | 6.33 | 6.51 | 6.74 |



### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Project Scenario: WASP-1997-5ftonly

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.15                                  | 4.22 | 4.28 | 4.38 | 4.49 | 4.57 | 4.67 | 4.72 | 4.77 |
| FR2       | 3.95                                  | 4.00 | 4.04 | 4.23 | 4.34 | 4.47 | 4.55 | 4.59 | 4.64 |
| FR3       | 3.74                                  | 3.79 | 3.85 | 4.00 | 4.14 | 4.28 | 4.44 | 4.51 | 4.58 |
| FR4       | 3.70                                  | 3.73 | 3.75 | 3.93 | 4.04 | 4.17 | 4.47 | 4.62 | 4.90 |
| FR5       | 3.73                                  | 3.79 | 3.84 | 4.01 | 4.14 | 4.31 | 4.69 | 5.01 | 5.24 |
| FR6       | 3.92                                  | 3.95 | 4.00 | 4.16 | 4.28 | 4.54 | 5.09 | 5.36 | 5.55 |
| FR7       | 4.28                                  | 4.35 | 4.44 | 4.66 | 5.26 | 5.84 | 6.16 | 6.33 | 6.42 |
| FR8       | 4.57                                  | 4.70 | 4.84 | 5.14 | 5.77 | 6.19 | 6.47 | 6.59 | 6.74 |
| FR9       | 5.20                                  | 5.45 | 5.62 | 5.99 | 6.36 | 6.68 | 6.94 | 7.16 | 7.25 |
| FR10      | 5.70                                  | 5.85 | 6.02 | 6.30 | 6.57 | 6.82 | 7.17 | 7.22 | 7.32 |
| FR11      | 4.87                                  | 5.10 | 5.27 | 5.60 | 5.89 | 6.18 | 6.45 | 6.56 | 6.68 |
| MR1       | 4.28                                  | 4.37 | 4.50 | 4.67 | 4.92 | 5.20 | 5.41 | 5.54 | 5.66 |
| MR2       | 4.13                                  | 4.26 | 4.42 | 4.62 | 4.90 | 5.17 | 5.45 | 5.55 | 5.62 |
| MR3       | 3.86                                  | 4.02 | 4.09 | 4.36 | 4.64 | 5.07 | 5.42 | 5.53 | 5.67 |
| MR4       | 4.41                                  | 4.51 | 4.64 | 4.80 | 5.07 | 5.24 | 5.46 | 5.60 | 5.73 |
| MR5       | 2.30                                  | 2.58 | 2.99 | 3.52 | 5.30 | 6.17 | 6.53 | 6.80 | 7.03 |
| MR6       | 2.16                                  | 2.62 | 3.09 | 3.61 | 5.70 | 6.34 | 6.79 | 6.96 | 7.28 |
| LBR1      | 4.29                                  | 4.51 | 4.60 | 4.84 | 5.03 | 5.22 | 5.32 | 5.46 | 5.60 |
| LBR2      | 3.69                                  | 3.79 | 3.95 | 4.15 | 4.36 | 4.55 | 4.73 | 4.80 | 4.90 |
| LBR3      | 3.63                                  | 3.71 | 3.77 | 3.87 | 4.02 | 4.17 | 4.34 | 4.43 | 4.52 |
| BR1       | 3.53                                  | 3.58 | 3.64 | 3.87 | 4.00 | 4.15 | 4.34 | 4.41 | 4.49 |
| BR2       | 3.28                                  | 3.37 | 3.44 | 3.59 | 3.78 | 3.95 | 4.08 | 4.23 | 4.32 |
| BR3       | 3.42                                  | 3.48 | 3.52 | 3.60 | 3.71 | 3.87 | 3.95 | 3.99 | 4.02 |
| SCh1      | 3.46                                  | 3.56 | 3.62 | 3.72 | 3.83 | 3.92 | 4.01 | 4.08 | 4.16 |
| SCh2      | 3.91                                  | 4.01 | 4.08 | 4.22 | 4.33 | 4.43 | 4.52 | 4.57 | 4.65 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.84 | 6.17 | 6.35 | 6.41 | 6.48 |
| StbR      | 4.51                                  | 4.75 | 4.93 | 5.24 | 5.55 | 5.85 | 6.07 | 6.15 | 6.28 |

Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline:nario: WASP1997Existing

Project:nario: WASP-1997-5ftonly

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |      |      |      |       |       |       |       |       |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|------|------|------|-------|-------|-------|-------|-------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%   | 10%  | 25%  | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1       | 0.02                                 | 0.02  | 0.02  | 0.00  | -0.01 | -0.02 | -0.05 | -0.07 | -0.07 |  | 0.5                                        | 0.5  | 0.5  | 0.1  | -0.2  | -0.4  | -1.2  | -1.5  | -1.5  |  |
| FR2       | 0.01                                 | 0.00  | 0.01  | -0.02 | -0.03 | -0.07 | -0.09 | -0.09 | -0.12 |  | 0.2                                        | 0.1  | 0.2  | -0.5 | -0.8  | -1.5  | -2.0  | -2.0  | -2.4  |  |
| FR3       | 0.04                                 | 0.02  | 0.01  | -0.03 | -0.05 | -0.10 | -0.27 | -0.28 | -0.41 |  | 1.2                                        | 0.6  | 0.4  | -0.6 | -1.2  | -2.4  | -5.8  | -5.8  | -8.3  |  |
| FR4       | 0.04                                 | 0.02  | 0.01  | -0.06 | -0.08 | -0.20 | -0.47 | -0.69 | -0.85 |  | 1.0                                        | 0.6  | 0.2  | -1.5 | -1.9  | -4.6  | -9.5  | -12.9 | -11.7 |  |
| FR5       | 0.05                                 | 0.03  | -0.04 | -0.07 | -0.14 | -0.45 | -0.72 | -0.84 | -0.56 |  | 1.3                                        | 0.7  | -1.2 | 1.8  | -3.2  | -9.5  | -13.3 | -11.3 | -9.6  |  |
| FR6       | -0.04                                | -0.06 | -0.12 | -0.16 | -0.27 | -0.66 | -0.69 | -0.56 | -0.49 |  | -1.0                                       | -1.5 | -2.8 | -3.6 | -5.9  | -12.7 | -11.9 | -9.5  | -8.1  |  |
| FR7       | -0.16                                | -0.20 | -0.26 | -0.43 | -0.59 | -0.35 | -0.25 | -0.24 | -0.28 |  | -3.7                                       | -4.4 | -5.5 | -8.4 | -10.1 | -5.6  | -3.9  | -3.6  | -4.1  |  |
| FR8       | -0.29                                | -0.36 | -0.45 | -0.52 | -0.38 | -0.24 | -0.20 | -0.21 | -0.24 |  | -5.9                                       | -7.0 | -8.5 | -9.2 | -6.2  | -3.7  | -3.0  | -3.1  | -3.4  |  |
| FR9       | -0.46                                | -0.45 | -0.40 | -0.28 | -0.18 | -0.13 | -0.13 | -0.07 | -0.08 |  | -8.2                                       | -7.6 | -6.6 | -4.4 | -2.7  | -1.8  | -1.8  | -0.9  | -1.1  |  |
| FR10      | -0.02                                | 0.00  | 0.01  | 0.00  | 0.00  | 0.01  | 0.01  | -0.02 | 0.00  |  | -0.3                                       | 0.0  | 0.1  | 0.0  | 0.0   | 0.1   | 0.1   | -0.2  | 0.0   |  |
| FR11      | 0.00                                 | 0.01  | 0.00  | 0.01  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  |  | 0.0                                        | 0.1  | 0.0  | 0.2  | 0.1   | 0.0   | 0.0   | 0.1   | 0.1   |  |
| MR1       | -0.20                                | -0.21 | -0.20 | -0.22 | -0.26 | -0.34 | -0.44 | -0.43 | -0.38 |  | -4.4                                       | -4.6 | -4.3 | -4.5 | -4.9  | -6.1  | -7.5  | -7.2  | -6.3  |  |
| MR2       | -0.06                                | -0.05 | -0.09 | -0.17 | -0.23 | -0.32 | -0.35 | -0.36 | -0.41 |  | -1.5                                       | -1.2 | -2.1 | -3.6 | -4.5  | -5.9  | -6.0  | -6.1  | -6.8  |  |
| MR3       | 0.01                                 | -0.02 | -0.02 | -0.02 | -0.10 | -0.15 | -0.17 | -0.20 | -0.18 |  | 0.2                                        | -0.5 | -0.4 | -0.5 | -2.0  | -2.9  | -3.0  | -3.4  | -3.1  |  |
| MR4       | 0.01                                 | 0.00  | 0.02  | 0.01  | 0.01  | 0.00  | 0.02  | 0.06  | 0.04  |  | 0.3                                        | 0.1  | 0.5  | 0.3  | 0.2   | 0.0   | 0.3   | 1.1   | 0.6   |  |
| MR5       | -0.01                                | 0.03  | 0.03  | 0.06  | -0.03 | 0.01  | 0.00  | -0.02 | 0.02  |  | -0.6                                       | 1.0  | 0.9  | 1.8  | -0.6  | 0.2   | 0.1   | -0.3  | 0.3   |  |
| MR6       | 0.01                                 | 0.08  | 0.03  | 0.03  | 0.01  | 0.01  | -0.01 | 0.02  | 0.00  |  | 0.6                                        | 3.3  | 1.1  | 0.7  | 0.2   | 0.1   | -0.2  | 0.2   | 0.1   |  |
| LBR1      | 0.00                                 | 0.02  | 0.00  | 0.05  | 0.04  | 0.03  | 0.03  | 0.01  | 0.03  |  | 0.0                                        | 0.4  | 1.0  | 0.8  | 0.5   | 0.5   | 0.3   | 0.5   |       |  |
| LBR2      | 0.00                                 | -0.02 | -0.01 | 0.01  | 0.01  | 0.00  | 0.02  | 0.03  | 0.01  |  | -0.1                                       | -0.4 | -0.1 | 0.3  | 0.3   | -0.1  | 0.5   | 0.6   | 0.2   |  |
| LBR3      | 0.09                                 | 0.13  | 0.11  | 0.09  | 0.07  | 0.06  | 0.10  | 0.08  | 0.06  |  | 2.7                                        | 3.5  | 3.1  | 2.3  | 1.7   | 1.4   | 2.4   | 1.9   | 1.4   |  |
| BR1       | 0.00                                 | -0.01 | 0.00  | -0.03 | -0.04 | -0.07 | -0.09 | -0.09 | -0.11 |  | -0.1                                       | -0.2 | 0.1  | -0.7 | -0.9  | -1.6  | -2.1  | -2.0  | -2.5  |  |
| BR2       | -0.01                                | -0.01 | -0.02 | -0.03 | -0.03 | -0.03 | -0.06 | -0.06 | -0.07 |  | -0.4                                       | -0.3 | -0.5 | -0.8 | -0.9  | -1.4  | -1.5  | -1.6  |       |  |
| BR3       | -0.04                                | -0.03 | -0.04 | -0.03 | -0.03 | 0.02  | -0.02 | -0.01 | 0.01  |  | -1.1                                       | -0.9 | -1.2 | -0.8 | -0.8  | 0.6   | -0.4  | -0.1  | 0.2   |  |
| SCh1      | -0.04                                | 0.00  | -0.01 | 0.00  | 0.00  | -0.03 | -0.03 | -0.02 | 0.00  |  | -1.3                                       | 0.0  | -0.3 | 0.0  | 0.1   | -0.8  | -0.7  | -0.5  | -0.1  |  |
| SCh2      | -0.03                                | -0.03 | -0.01 | -0.03 | -0.04 | -0.06 | -0.09 | -0.08 | -0.07 |  | -0.8                                       | -0.7 | -0.2 | -0.8 | -1.0  | -1.3  | -1.8  | -1.6  | -1.5  |  |
| SR        | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |  | 0.0                                        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |
| StbR      | -0.23                                | -0.18 | -0.16 | -0.20 | -0.24 | -0.24 | -0.23 | -0.27 | -0.28 |  | -4.8                                       | -3.6 | -3.2 | -3.7 | -4.2  | -4.0  | -3.6  | -4.2  | -4.2  |  |



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# **47 ft Channel Depth**

## *Mitigation Plan 6a*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
 Scenario: WASP-1997-Plan6a\_5ft

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.93                   | 3.99 | 4.05 | 4.2  | 4.34 | 4.48 | 4.56 | 4.6  | 4.65 |
| FR2  | 3.66                   | 4.08 | 4.17 | 4.32 | 4.46 | 4.61 | 4.76 | 4.82 | 4.93 |
| FR3  | 3.61                   | 3.66 | 3.7  | 3.91 | 4.04 | 4.22 | 4.58 | 5.09 | 5.47 |
| FR4  | 3.61                   | 3.66 | 3.7  | 3.92 | 4.03 | 4.2  | 4.6  | 5.02 | 5.53 |
| FR5  | 3.73                   | 3.78 | 3.88 | 4.05 | 4.18 | 4.38 | 4.83 | 5.07 | 5.28 |
| FR6  | 3.72                   | 3.83 | 3.89 | 4.07 | 4.19 | 4.38 | 4.86 | 5.15 | 5.34 |
| FR7  | 4.4                    | 4.53 | 4.65 | 4.89 | 5.45 | 5.93 | 6.31 | 6.55 | 7.12 |
| FR8  | 4.38                   | 4.49 | 4.6  | 4.86 | 5.64 | 6.14 | 6.44 | 6.57 | 6.72 |
| FR9  | 4.91                   | 5.32 | 5.48 | 5.97 | 6.38 | 6.69 | 7.02 | 7.2  | 7.36 |
| FR10 | 4.69                   | 5.04 | 5.23 | 5.55 | 5.89 | 6.32 | 6.6  | 6.85 | 7.16 |
| FR11 | 4.18                   | 4.59 | 4.81 | 5.11 | 5.65 | 6.14 | 6.4  | 6.66 | 6.94 |
| MR1  | 4.2                    | 4.34 | 4.43 | 4.66 | 4.94 | 5.17 | 5.47 | 5.66 | 5.99 |
| MR2  | 4.22                   | 4.36 | 4.49 | 4.71 | 4.98 | 5.24 | 5.55 | 5.68 | 5.78 |
| MR3  | 4.19                   | 4.36 | 4.44 | 4.64 | 4.94 | 5.19 | 5.41 | 5.6  | 5.83 |
| MR4  | 4.36                   | 4.45 | 4.59 | 4.77 | 5.06 | 5.3  | 5.59 | 5.69 | 5.99 |
| MR5  | 2.2                    | 2.78 | 3.12 | 3.86 | 5.36 | 6.19 | 6.53 | 6.78 | 7.03 |
| MR6  | 6.15                   | 6.32 | 6.45 | 6.64 | 6.9  | 7.23 | 7.41 | 7.51 | 7.61 |
| LBR1 | 4.06                   | 4.82 | 5.12 | 5.49 | 5.8  | 6.1  | 6.32 | 6.55 | 6.7  |
| LBR2 | 4.48                   | 4.57 | 4.69 | 4.92 | 5.14 | 5.38 | 5.56 | 5.68 | 5.81 |
| LBR3 | 2.54                   | 2.67 | 2.82 | 3.04 | 3.32 | 3.63 | 3.82 | 3.89 | 4.02 |
| BR1  | 1.83                   | 2.18 | 2.7  | 3.5  | 4.11 | 4.69 | 4.94 | 5.02 | 5.09 |
| BR2  | 1.59                   | 1.8  | 1.98 | 2.36 | 2.76 | 3.06 | 3.32 | 3.41 | 3.56 |
| BR3  | 1.72                   | 1.95 | 2.05 | 2.22 | 2.47 | 2.92 | 3.4  | 3.53 | 3.74 |
| SCH1 | 2.3                    | 2.47 | 2.68 | 2.91 | 3.05 | 3.28 | 3.64 | 3.78 | 3.91 |
| SCH2 | 3.68                   | 3.8  | 3.92 | 4.09 | 4.28 | 4.43 | 4.55 | 4.61 | 4.76 |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.61 | 5.96 | 6.1  | 6.15 | 6.22 |
| StbR | 3.75                   | 4.3  | 4.59 | 5.11 | 5.67 | 6.05 | 6.32 | 6.45 | 6.66 |



### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31  
 Project:enario: WASP-1997-Plan6a\_5ft

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.13                                  | 4.20 | 4.26 | 4.37 | 4.47 | 4.56 | 4.65 | 4.72 | 4.80 |
| FR2       | 3.97                                  | 4.00 | 4.03 | 4.26 | 4.36 | 4.50 | 4.60 | 4.63 | 4.68 |
| FR3       | 3.79                                  | 3.84 | 3.89 | 4.08 | 4.19 | 4.35 | 4.52 | 4.59 | 4.65 |
| FR4       | 3.75                                  | 3.77 | 3.80 | 4.02 | 4.10 | 4.25 | 4.57 | 4.74 | 4.96 |
| FR5       | 3.79                                  | 3.83 | 3.92 | 4.08 | 4.20 | 4.39 | 4.81 | 5.10 | 5.29 |
| FR6       | 3.94                                  | 3.97 | 4.01 | 4.22 | 4.32 | 4.59 | 5.15 | 5.44 | 5.60 |
| FR7       | 4.26                                  | 4.35 | 4.45 | 4.66 | 5.18 | 5.78 | 6.12 | 6.27 | 6.37 |
| FR8       | 4.57                                  | 4.69 | 4.80 | 5.10 | 5.70 | 6.18 | 6.42 | 6.56 | 6.64 |
| FR9       | 5.13                                  | 5.34 | 5.52 | 5.85 | 6.34 | 6.63 | 6.85 | 7.06 | 7.22 |
| FR10      | 5.46                                  | 5.76 | 5.89 | 6.16 | 6.47 | 6.74 | 7.09 | 7.19 | 7.26 |
| FR11      | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.49 | 5.76 | 6.00 | 6.12 | 6.30 |
| MR1       | 4.29                                  | 4.42 | 4.53 | 4.70 | 4.96 | 5.19 | 5.44 | 5.57 | 5.73 |
| MR2       | 4.26                                  | 4.40 | 4.55 | 4.74 | 4.96 | 5.18 | 5.47 | 5.60 | 5.70 |
| MR3       | 4.32                                  | 4.41 | 4.52 | 4.73 | 4.96 | 5.16 | 5.32 | 5.40 | 5.55 |
| MR4       | 4.77                                  | 4.91 | 5.03 | 5.23 | 5.52 | 5.74 | 5.96 | 6.15 | 6.31 |
| MR5       | 3.26                                  | 3.53 | 3.92 | 4.37 | 5.61 | 6.19 | 6.49 | 6.75 | 6.95 |
| MR6       | 2.94                                  | 3.22 | 3.43 | 3.71 | 4.21 | 4.67 | 4.88 | 5.03 | 5.14 |
| LBR1      | 4.62                                  | 4.95 | 5.01 | 5.26 | 5.49 | 5.71 | 5.95 | 6.07 | 6.17 |
| LBR2      | 4.31                                  | 4.42 | 4.51 | 4.70 | 4.94 | 5.15 | 5.33 | 5.41 | 5.53 |
| LBR3      | 3.34                                  | 3.45 | 3.57 | 3.74 | 3.96 | 4.17 | 4.37 | 4.43 | 4.56 |
| BR1       | 2.60                                  | 3.28 | 3.60 | 4.04 | 4.28 | 4.50 | 4.65 | 4.70 | 4.82 |
| BR2       | 1.93                                  | 2.13 | 2.28 | 2.67 | 3.24 | 3.70 | 4.02 | 4.15 | 4.34 |
| BR3       | 2.24                                  | 2.33 | 2.42 | 2.55 | 2.69 | 2.86 | 2.98 | 3.06 | 3.11 |
| SCh1      | 3.40                                  | 3.50 | 3.59 | 3.72 | 3.82 | 3.93 | 4.01 | 4.08 | 4.16 |
| SCh2      | 3.93                                  | 4.01 | 4.08 | 4.23 | 4.33 | 4.45 | 4.53 | 4.58 | 4.67 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR      | 4.74                                  | 4.90 | 5.03 | 5.32 | 5.63 | 5.85 | 6.01 | 6.09 | 6.23 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline in:WASP1997Existing

Project ario: WASP-1997-Plan6a\_5ft

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1       | 0.00                                 | 0.00  | 0.00  | 0.00  | -0.03 | -0.03 | -0.07 | -0.07 | -0.04 |  | 0.0                                        | 0.1   | 0.0   | 0.0   | -0.6  | -0.6  | -1.6  | -1.5  | -0.9  |  |
| FR2       | 0.02                                 | 0.00  | 0.00  | 0.01  | -0.01 | -0.04 | -0.05 | -0.06 | -0.08 |  | 0.6                                        | 0.1   | 0.0   | 0.1   | -0.2  | -0.9  | -1.1  | -1.2  | -1.7  |  |
| FR3       | 0.09                                 | 0.07  | 0.05  | 0.05  | 0.00  | -0.03 | -0.19 | -0.18 | -0.34 |  | 2.5                                        | 1.8   | 1.4   | 1.3   | 0.1   | -0.8  | -4.1  | -4.1  | -6.8  |  |
| FR4       | 0.09                                 | 0.07  | 0.05  | 0.03  | -0.02 | -0.12 | -0.37 | -0.57 | -0.58 |  | 2.6                                        | 1.8   | 1.4   | 0.9   | -0.4  | -2.8  | -7.4  | -10.6 | -10.5 |  |
| FR5       | 0.12                                 | 0.07  | 0.03  | 0.00  | -0.07 | -0.38 | -0.60 | -0.55 | -0.51 |  | 3.2                                        | 1.8   | 0.8   | 0.1   | -1.7  | -7.9  | -11.0 | -9.7  | -8.7  |  |
| FR6       | -0.02                                | -0.04 | -0.10 | -0.10 | -0.23 | -0.61 | -0.63 | -0.48 | -0.44 |  | -0.5                                       | -1.1  | -2.4  | -2.3  | -5.0  | -11.7 | -10.9 | -8.2  | -7.3  |  |
| FR7       | -0.18                                | -0.20 | -0.25 | -0.43 | -0.67 | -0.40 | -0.30 | -0.29 | -0.33 |  | 4.0                                        | 4.3   | -5.2  | -8.4  | -11.5 | -6.4  | -4.7  | -4.4  | -4.9  |  |
| FR8       | -0.30                                | -0.37 | -0.48 | -0.56 | -0.46 | -0.25 | -0.25 | -0.24 | -0.34 |  | -6.1                                       | -7.2  | -9.2  | -9.8  | -7.4  | -3.9  | -3.8  | -3.5  | -4.8  |  |
| FR9       | -0.54                                | -0.56 | -0.50 | -0.41 | -0.20 | -0.18 | -0.22 | -0.16 | -0.12 |  | -9.6                                       | -9.5  | -8.3  | -6.5  | -3.0  | -2.6  | -3.1  | -2.3  | -1.6  |  |
| FR10      | -0.25                                | -0.09 | -0.12 | -0.14 | -0.09 | -0.07 | -0.07 | -0.05 | -0.06 |  | -4.4                                       | -1.5  | -2.0  | -2.3  | -1.4  | -1.1  | -1.0  | -0.6  | -0.8  |  |
| FR11      | -0.33                                | -0.35 | -0.37 | -0.41 | -0.39 | -0.41 | -0.45 | -0.44 | -0.38 |  | -6.9                                       | -6.9  | -6.9  | -7.3  | -6.6  | -6.7  | -7.0  | -6.8  | -5.7  |  |
| MR1       | -0.19                                | -0.16 | -0.17 | -0.19 | -0.22 | -0.35 | -0.40 | -0.40 | -0.32 |  | -4.2                                       | -3.5  | -3.7  | -3.9  | -4.2  | -6.2  | -6.9  | -6.7  | -5.2  |  |
| MR2       | 0.07                                 | 0.09  | 0.04  | -0.04 | -0.17 | -0.31 | -0.33 | -0.31 | -0.33 |  | 1.6                                        | 2.0   | 0.8   | -0.9  | -3.2  | -5.7  | -5.7  | -5.2  | -5.4  |  |
| MR3       | 0.46                                 | 0.37  | 0.41  | 0.35  | 0.22  | -0.07 | -0.26 | -0.32 | -0.30 |  | 12.0                                       | 9.2   | 10.0  | 7.9   | 4.7   | -1.3  | -4.7  | -5.6  | -5.1  |  |
| MR4       | 0.38                                 | 0.40  | 0.41  | 0.44  | 0.46  | 0.49  | 0.52  | 0.61  | 0.61  |  | 8.6                                        | 9.0   | 9.2   | 9.2   | 9.4   | 9.5   | 11.1  | 10.8  |       |  |
| MR5       | 0.94                                 | 0.97  | 0.96  | 0.90  | 0.28  | 0.03  | -0.03 | -0.07 | -0.06 |  | 40.7                                       | 38.0  | 32.2  | 26.1  | 5.3   | 0.4   | -0.5  | -1.0  | -0.8  |  |
| MR6       | 0.79                                 | 0.69  | 0.37  | 0.13  | -1.48 | -1.65 | -1.92 | -1.91 | -2.14 |  | 36.9                                       | 27.1  | 12.1  | 3.6   | -25.9 | -26.1 | -28.2 | -27.5 | -29.4 |  |
| LBR1      | 0.32                                 | 0.45  | 0.42  | 0.46  | 0.50  | 0.52  | 0.65  | 0.63  | 0.60  |  | 7.5                                        | 10.0  | 9.1   | 9.6   | 10.0  | 10.1  | 12.3  | 11.5  | 10.8  |  |
| LBR2      | 0.62                                 | 0.61  | 0.55  | 0.57  | 0.59  | 0.60  | 0.62  | 0.64  | 0.64  |  | 16.7                                       | 14.0  | 13.7  | 13.6  | 13.1  | 13.1  | 13.5  | 13.1  |       |  |
| LBR3      | -0.20                                | -0.13 | -0.09 | -0.04 | 0.01  | 0.06  | 0.13  | 0.08  | 0.10  |  | -5.7                                       | -3.5  | -2.4  | -1.1  | 0.2   | 1.5   | 3.1   | 1.8   | 2.2   |  |
| BR1       | -0.93                                | -0.30 | -0.03 | 0.14  | 0.25  | 0.28  | 0.22  | 0.20  | 0.22  |  | -26.4                                      | -8.5  | -1.0  | 3.5   | 6.1   | 6.7   | 5.1   | 4.4   | 4.8   |  |
| BR2       | -1.37                                | -1.25 | -1.17 | -0.94 | -0.58 | -0.29 | -0.12 | -0.15 | -0.05 |  | -41.6                                      | -37.0 | -34.0 | -26.1 | -15.1 | -7.3  | -2.9  | -3.4  | -1.2  |  |
| BR3       | -1.22                                | -1.18 | -1.14 | -1.08 | -1.05 | -0.99 | -0.99 | -0.94 | -0.90 |  | -35.3                                      | -33.6 | -32.0 | -29.8 | -28.0 | -25.7 | -25.0 | -23.5 | -22.5 |  |
| SCh1      | -0.10                                | -0.06 | -0.04 | 0.00  | 0.00  | -0.03 | -0.03 | -0.02 | 0.00  |  | -3.0                                       | -1.7  | -1.1  | -0.1  | -0.1  | -0.7  | -0.8  | -0.5  | 0.0   |  |
| SCh2      | -0.01                                | -0.03 | -0.02 | -0.02 | -0.05 | -0.05 | -0.08 | -0.07 | -0.06 |  | -0.3                                       | -0.7  | -0.4  | -0.5  | -1.1  | -1.1  | -1.7  | -1.4  | -1.2  |  |
| SR        | 0.00                                 | 0.00  | 0.00  | -0.01 | -0.01 | 0.00  | -0.01 | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR      | 0.00                                 | -0.03 | -0.06 | -0.12 | -0.17 | -0.24 | -0.29 | -0.33 | -0.33 |  | 0.0                                        | -0.6  | -1.2  | -2.2  | -2.9  | -4.0  | -4.6  | -5.2  | -5.1  |  |

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# **47 ft Channel Depth**

*Mitigation Plan 6a*

*D.O. Mitigation*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**

Scenario: 6A5ft-withDOMitigation

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |       |
|------|------------------------|------|------|------|------|------|------|------|-------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%   |
| FR1  | 4.02                   | 4.08 | 4.15 | 4.35 | 4.47 | 4.59 | 4.67 | 4.72 | 4.75  |
| FR2  | 3.89                   | 3.97 | 4.06 | 4.31 | 4.49 | 4.66 | 4.92 | 4.99 | 5.05  |
| FR3  | 3.78                   | 3.84 | 3.9  | 4.15 | 4.33 | 4.6  | 5.11 | 5.68 | 6.11  |
| FR4  | 3.79                   | 3.84 | 3.91 | 4.16 | 4.34 | 4.6  | 5.11 | 5.6  | 6.18  |
| FR5  | 3.92                   | 3.99 | 4.11 | 4.35 | 4.52 | 4.84 | 5.44 | 5.74 | 5.99  |
| FR6  | 3.93                   | 4.06 | 4.14 | 4.37 | 4.54 | 4.83 | 5.49 | 5.86 | 6.07  |
| FR7  | 4.31                   | 4.46 | 4.53 | 4.77 | 5.02 | 5.71 | 6.64 | 7.03 | 7.25  |
| FR8  | 4.81                   | 4.93 | 5.11 | 5.46 | 6.72 | 7.93 | 8.92 | 9.22 | 9.57  |
| FR9  | 5.6                    | 6.22 | 6.47 | 6.8  | 7.4  | 8.6  | 9.2  | 9.8  | 10.72 |
| FR10 | 4.69                   | 5.04 | 5.23 | 5.55 | 5.89 | 6.32 | 6.6  | 6.85 | 7.15  |
| FR11 | 4.18                   | 4.59 | 4.81 | 5.11 | 5.66 | 6.14 | 6.4  | 6.66 | 6.94  |
| MR1  | 4.58                   | 4.74 | 4.93 | 5.16 | 5.48 | 5.8  | 6.21 | 6.36 | 6.57  |
| MR2  | 4.47                   | 4.59 | 4.7  | 4.96 | 5.33 | 5.76 | 6.06 | 6.28 | 6.5   |
| MR3  | 4.34                   | 4.53 | 4.63 | 4.8  | 5.1  | 5.44 | 5.72 | 5.94 | 6.18  |
| MR4  | 4.48                   | 4.64 | 4.7  | 4.89 | 5.16 | 5.39 | 5.6  | 5.7  | 5.99  |
| MR5  | 2.2                    | 2.78 | 3.12 | 3.86 | 5.36 | 6.19 | 6.53 | 6.78 | 7.03  |
| MR6  | 6.15                   | 6.32 | 6.45 | 6.64 | 6.9  | 7.23 | 7.41 | 7.51 | 7.61  |
| LBR1 | 4.06                   | 4.82 | 5.12 | 5.5  | 5.8  | 6.1  | 6.32 | 6.55 | 6.7   |
| LBR2 | 4.48                   | 4.57 | 4.69 | 4.92 | 5.14 | 5.38 | 5.56 | 5.68 | 5.81  |
| LBR3 | 2.59                   | 2.68 | 2.82 | 3.05 | 3.32 | 3.63 | 3.82 | 3.89 | 4.02  |
| BR1  | 3.55                   | 4.26 | 4.57 | 4.83 | 5.06 | 5.28 | 5.56 | 5.69 | 5.78  |
| BR2  | 2.59                   | 2.78 | 2.93 | 3.32 | 4.36 | 4.94 | 5.17 | 5.25 | 5.39  |
| BR3  | 2.36                   | 2.46 | 2.53 | 2.64 | 2.83 | 3.05 | 3.36 | 3.59 | 3.84  |
| SCH1 | 2.49                   | 2.64 | 2.85 | 3.07 | 3.23 | 3.43 | 3.75 | 3.89 | 3.99  |
| SCH2 | 3.91                   | 4.02 | 4.15 | 4.33 | 4.51 | 4.66 | 4.78 | 4.84 | 4.99  |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.61 | 5.96 | 6.1  | 6.15 | 6.22  |
| StbR | 4.12                   | 4.93 | 5.23 | 6.01 | 6.86 | 7.58 | 8.09 | 8.44 | 8.86  |

### Delta D.O. Percentiles for Critical Cells

|           |                                  |
|-----------|----------------------------------|
| Baseline: | Scenario: WASP1997Existing       |
| Project:  | Scenario: 6A5ft-withDOMitigation |

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
|      | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |      |
|      | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |      |
| FR1  | 0.1                   | 2.6   | 0.09  | 2.3   | 0.1   | 2.5   | 0.13  | 3.1   | 0.09  | 2.1   | 0.07  | 1.5   | 0.04  | 0.9   | 0.02  | 0.4   | 0.01  | 0.2   |      |
| FR2  | 0.23                  | 6.3   | 0.21  | 5.6   | 0.22  | 5.7   | 0.28  | 6.9   | 0.27  | 6.4   | 0.26  | 5.9   | 0.3   | 6.5   | 0.3   | 6.4   | -0.03 | -0.6  |      |
| FR3  | 0.29                  | 8.3   | 0.25  | 7.0   | 0.26  | 7.1   | 0.28  | 7.2   | 0.28  | 6.9   | 0.31  | 7.2   | 0.33  | 6.9   | 0.61  | 12.0  | 0.51  | 9.1   |      |
| FR4  | 0.29                  | 8.3   | 0.28  | 7.9   | 0.29  | 8.0   | 0.24  | 6.1   | 0.27  | 6.6   | 0.2   | 4.5   | 0.15  | 3.0   | 0.29  | 5.5   | 0.68  | 12.4  |      |
| FR6  | 0.3                   | 8.3   | 0.25  | 6.7   | 0.22  | 5.7   | 0.22  | 6.8   | 0.21  | 4.9   | -0.05 | -1.0  | 0.02  | 0.4   | 0.11  | 2.0   | 0.21  | 3.6   |      |
| FR8  | 0.24                  | 6.5   | 0.3   | 8.0   | 0.25  | 6.4   | 0.25  | 6.1   | 0.28  | 6.6   | 0.05  | 1.0   | -0.08 | -1.4  | 0.09  | 1.6   | 0.16  | 2.7   |      |
| FR7  | 0.14                  | 3.4   | 0.21  | 4.9   | 0.2   | 4.6   | 0.16  | 3.5   | -0.01 | -0.2  | -0.27 | -4.5  | 0.38  | 6.1   | 0.67  | 10.5  | 0.76  | 11.7  |      |
| FR8  | 0.15                  | 3.2   | 0.15  | 3.1   | 0.05  | 1.0   | -0.05 | -0.9  | 0.6   | 9.8   | 1.49  | 23.3  | 2.2   | 32.7  | 2.37  | 34.6  | 2.46  | 34.6  |      |
| FR9  | 0.72                  | 14.8  | 1.19  | 23.7  | 1.14  | 21.4  | 1.08  | 18.9  | 1.12  | 17.8  | 2     | 30.3  | 2.35  | 34.3  | 2.78  | 39.6  | 3.53  | 49.1  |      |
| FR10 | 0.38                  | 8.8   | 0.26  | 5.4   | 0.28  | 5.7   | 0.23  | 4.3   | -0.02 | -0.3  | -0.11 | -1.7  | -0.08 | -1.2  | -0.16 | -2.3  | -0.07 | -1.0  |      |
| FR11 | 0.01                  | 0.2   | -0.11 | -2.3  | -0.12 | -2.4  | -0.13 | -2.5  | -0.01 | -0.2  | 0     | 0     | 0     | -0.1  | -1.5  | 0.02  | 0.3   | -0.19 | -2.7 |
| MR1  | 0.17                  | 3.9   | 0.21  | 4.6   | 0.31  | 6.7   | 0.27  | 5.5   | 0.32  | 6.2   | 0.21  | 3.8   | 0.32  | 5.4   | 0.36  | 6.0   | 0.35  | 5.6   |      |
| MR2  | 0.44                  | 10.9  | 0.44  | 10.6  | 0.37  | 8.5   | 0.34  | 7.4   | 0.26  | 5.1   | 0.23  | 4.2   | 0.26  | 4.5   | 0.38  | 6.4   | 0.47  | 7.8   |      |
| MR3  | 0.64                  | 17.3  | 0.64  | 16.5  | 0.63  | 15.8  | 0.81  | 14.6  | 0.58  | 12.8  | 0.37  | 7.3   | 0.01  | 0.2   | 0.01  | 0.2   | -0.01 | -0.2  |      |
| MR4  | 0.59                  | 15.2  | 0.61  | 15.1  | 0.58  | 14.1  | 0.5   | 11.4  | 0.55  | 11.9  | 0.5   | 10.2  | 0.54  | 10.7  | 0.52  | 10.0  | 0.58  | 10.7  |      |
| MR6  | 0.71                  | 47.7  | 0.74  | 36.3  | 0.71  | 29.5  | 0.81  | 26.6  | 0.39  | -7.8  | -0.04 | -0.6  | -0.04 | -0.6  | -0.11 | -1.6  | -0.08 | -1.1  |      |
| MR6  | 4.04                  | 191.5 | 3.83  | 153.8 | 3.44  | 114.3 | 3.13  | 89.2  | 1.29  | 23.0  | 0.87  | 13.7  | 0.61  | 9.0   | 0.45  | 8.4   | 0.29  | 4.0   |      |
| LBR1 | 0.49                  | 13.7  | 0.47  | 10.8  | 0.37  | 7.8   | 0.37  | 7.2   | 0.37  | 6.8   | 0.46  | 8.2   | 0.35  | 5.9   | 0.39  | 6.3   | 0.23  | 3.6   |      |
| LBR2 | 0.79                  | 21.4  | 0.71  | 18.4  | 0.72  | 18.1  | 0.76  | 18.3  | 0.75  | 17.1  | 0.78  | 17.0  | 0.79  | 16.6  | 0.6   | 16.4  | 0.55  | 10.5  |      |
| LBR3 | -0.3                  | -10.4 | -0.6  | -18.3 | -0.65 | -18.7 | -0.63 | -17.1 | -0.63 | -15.9 | -0.71 | -16.4 | -0.91 | -19.2 | -1.1  | -22.0 | -1.22 | -23.3 |      |
| BR1  | 0.27                  | 8.2   | 0.95  | 24.9  | 1     | 28.0  | 1.09  | 29.1  | 1.09  | 27.5  | 1.08  | 25.7  | 1.13  | 25.5  | 1.16  | 25.6  | 1.14  | 24.6  |      |
| BR2  | 0.04                  | 1.6   | -0.06 | -2.1  | -0.06 | -2.0  | 0.08  | -2.5  | 0.92  | 26.7  | 1.24  | 33.5  | 1.33  | 34.6  | 1.32  | 33.6  | 1.36  | 33.7  |      |
| BR3  | -0.67                 | -22.1 | -0.8  | -24.5 | -0.91 | -26.5 | -0.98 | -27.1 | -0.95 | -25.1 | -0.9  | -22.8 | -0.72 | -17.6 | -0.56 | -13.5 | -0.41 | -9.6  |      |
| SCH1 | 0.1                   | 4.2   | 0.07  | 2.7   | 0.17  | 6.3   | 0.24  | 8.5   | 0.22  | 7.3   | 0.02  | 0.6   | -0.02 | -0.5  | 0     | 0     | -0.15 | -3.6  |      |
| SCH2 | 0.17                  | 4.5   | 0.11  | 2.8   | 0.14  | 3.5   | 0.19  | 4.6   | 0.18  | 4.2   | 0.19  | 4.3   | 0.18  | 3.9   | 0.16  | 3.4   | 0.17  | 3.5   |      |
| SR   | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |      |
| SUR  | 0.28                  | 7.3   | 0.71  | 16.8  | 0.66  | 14.4  | 0.97  | 19.2  | 1.11  | 20.6  | 1.38  | 22.3  | 1.6   | 24.7  | 1.8   | 27.1  | 2.02  | 29.5  |      |



### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Project:enario: 6A5ft-withDOmitigation

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.17                                  | 4.24 | 4.30 | 4.44 | 4.54 | 4.62 | 4.70 | 4.75 | 4.82 |
| FR2       | 4.09                                  | 4.12 | 4.16 | 4.43 | 4.57 | 4.73 | 4.88 | 4.95 | 5.01 |
| FR3       | 3.95                                  | 4.01 | 4.06 | 4.32 | 4.47 | 4.64 | 4.98 | 5.04 | 5.11 |
| FR4       | 3.94                                  | 3.97 | 4.00 | 4.28 | 4.43 | 4.60 | 5.09 | 5.33 | 5.61 |
| FR5       | 3.99                                  | 4.04 | 4.16 | 4.37 | 4.54 | 4.85 | 5.41 | 5.77 | 6.01 |
| FR6       | 4.21                                  | 4.24 | 4.31 | 4.57 | 4.75 | 5.13 | 5.84 | 6.22 | 6.38 |
| FR7       | 4.62                                  | 4.76 | 4.91 | 5.18 | 5.94 | 6.64 | 7.12 | 7.28 | 7.41 |
| FR8       | 5.07                                  | 5.22 | 5.36 | 5.75 | 6.90 | 7.81 | 8.57 | 8.76 | 8.94 |
| FR9       | 6.47                                  | 6.85 | 7.07 | 7.37 | 7.75 | 8.13 | 8.42 | 8.66 | 8.83 |
| FR10      | 5.46                                  | 5.76 | 5.90 | 6.18 | 6.53 | 6.80 | 7.15 | 7.25 | 7.60 |
| FR11      | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.49 | 5.76 | 6.00 | 6.12 | 6.30 |
| MR1       | 4.67                                  | 4.83 | 4.98 | 5.20 | 5.47 | 5.77 | 6.11 | 6.32 | 6.48 |
| MR2       | 4.55                                  | 4.69 | 4.83 | 5.14 | 5.42 | 5.70 | 6.03 | 6.30 | 6.44 |
| MR3       | 4.44                                  | 4.57 | 4.71 | 4.88 | 5.14 | 5.45 | 5.63 | 5.81 | 6.00 |
| MR4       | 4.82                                  | 4.94 | 5.06 | 5.26 | 5.54 | 5.77 | 5.97 | 6.16 | 6.32 |
| MR5       | 3.26                                  | 3.53 | 3.92 | 4.37 | 5.61 | 6.19 | 6.49 | 6.75 | 6.95 |
| MR6       | 2.94                                  | 3.22 | 3.43 | 3.71 | 4.21 | 4.67 | 4.88 | 5.03 | 5.14 |
| LBR1      | 4.62                                  | 4.95 | 5.01 | 5.26 | 5.49 | 5.71 | 5.95 | 6.08 | 6.17 |
| LBR2      | 4.31                                  | 4.42 | 4.51 | 4.70 | 4.94 | 5.15 | 5.33 | 5.41 | 5.53 |
| LBR3      | 3.34                                  | 3.46 | 3.57 | 3.74 | 3.96 | 4.17 | 4.37 | 4.43 | 4.56 |
| BR1       | 4.52                                  | 4.73 | 4.84 | 5.06 | 5.27 | 5.53 | 5.68 | 5.77 | 5.88 |
| BR2       | 3.04                                  | 3.45 | 3.74 | 4.27 | 4.91 | 5.24 | 5.42 | 5.48 | 5.57 |
| BR3       | 2.75                                  | 2.84 | 2.90 | 3.03 | 3.22 | 3.44 | 3.67 | 3.81 | 3.96 |
| SCh1      | 3.55                                  | 3.64 | 3.74 | 3.86 | 3.99 | 4.07 | 4.14 | 4.20 | 4.27 |
| SCh2      | 4.13                                  | 4.21 | 4.26 | 4.43 | 4.55 | 4.65 | 4.74 | 4.78 | 4.84 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR      | 5.18                                  | 5.53 | 5.71 | 6.16 | 6.63 | 7.06 | 7.31 | 7.46 | 7.63 |

Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline:nario: WASP1997Existing

Project:ario: 6A5ft-withDOMitigation

| Zone<br>Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|--------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|              | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1          | 0.04                                 | 0.04  | 0.04  | 0.06  | 0.04  | 0.03  | -0.03 | -0.04 | -0.02 |  | 0.9                                        | 1.0   | 0.9   | 1.4   | 1.0   | 0.7   | -0.6  | -0.9  | -0.4  |  |
| FR2          | 0.15                                 | 0.13  | 0.13  | 0.17  | 0.20  | 0.19  | 0.23  | 0.26  | 0.25  |  | 3.7                                        | 3.1   | 3.3   | 4.1   | 4.5   | 4.3   | 4.9   | 5.5   | 5.3   |  |
| FR3          | 0.25                                 | 0.24  | 0.23  | 0.29  | 0.28  | 0.26  | 0.27  | 0.25  | 0.12  |  | 6.8                                        | 6.3   | 5.9   | 7.2   | 6.8   | 5.8   | 5.7   | 5.3   | 2.5   |  |
| FR4          | 0.28                                 | 0.26  | 0.25  | 0.29  | 0.30  | 0.23  | 0.15  | 0.02  | 0.06  |  | 7.7                                        | 7.0   | 6.7   | 7.3   | 7.4   | 5.3   | 3.1   | 0.4   | 1.1   |  |
| FR5          | 0.31                                 | 0.28  | 0.28  | 0.29  | 0.27  | 0.09  | -0.01 | 0.12  | 0.22  |  | 8.5                                        | 7.5   | 7.1   | 7.2   | 6.2   | 1.8   | -0.1  | 2.2   | 3.7   |  |
| FR6          | 0.25                                 | 0.23  | 0.20  | 0.26  | 0.20  | -0.06 | 0.07  | 0.30  | 0.34  |  | 6.3                                        | 5.8   | 4.7   | 5.9   | 4.4   | -1.2  | 1.1   | 5.1   | 5.6   |  |
| FR7          | 0.18                                 | 0.21  | 0.22  | 0.09  | 0.08  | 0.45  | 0.71  | 0.72  | 0.71  |  | 4.0                                        | 4.7   | 4.7   | 1.8   | 1.4   | 7.3   | 11.1  | 10.9  | 10.6  |  |
| FR8          | 0.21                                 | 0.16  | 0.07  | 0.09  | 0.74  | 1.38  | 1.90  | 1.96  | 1.96  |  | 4.3                                        | 3.2   | 1.3   | 1.7   | 12.1  | 21.4  | 28.5  | 28.8  | 28.2  |  |
| FR9          | 0.81                                 | 0.95  | 1.05  | 1.11  | 1.21  | 1.32  | 1.36  | 1.43  | 1.49  |  | 14.2                                       | 16.1  | 17.5  | 17.8  | 18.5  | 19.3  | 19.2  | 19.8  | 20.4  |  |
| FR10         | -0.25                                | -0.09 | -0.11 | -0.12 | -0.04 | -0.01 | -0.02 | 0.01  | 0.28  |  | -4.4                                       | -1.5  | -1.9  | -1.9  | -0.6  | -0.1  | -0.2  | 0.1   | 3.8   |  |
| FR11         | -0.33                                | -0.35 | -0.37 | -0.41 | -0.39 | -0.41 | -0.45 | -0.44 | -0.38 |  | -6.9                                       | -6.9  | -6.9  | -7.3  | -6.6  | -6.7  | -7.0  | -6.6  | -5.7  |  |
| MR1          | 0.19                                 | 0.25  | 0.28  | 0.31  | 0.29  | 0.24  | 0.26  | 0.35  | 0.44  |  | 4.3                                        | 5.5   | 6.1   | 6.4   | 5.7   | 4.2   | 4.5   | 5.9   | 7.3   |  |
| MR2          | 0.35                                 | 0.37  | 0.32  | 0.35  | 0.29  | 0.21  | 0.23  | 0.39  | 0.41  |  | 8.4                                        | 8.6   | 7.1   | 7.3   | 5.7   | 3.7   | 3.9   | 6.6   | 6.8   |  |
| MR3          | 0.59                                 | 0.54  | 0.61  | 0.50  | 0.40  | 0.23  | 0.04  | 0.09  | 0.15  |  | 15.3                                       | 13.3  | 14.8  | 11.4  | 8.4   | 4.4   | 0.8   | 1.5   | 2.6   |  |
| MR4          | 0.43                                 | 0.43  | 0.44  | 0.48  | 0.48  | 0.53  | 0.53  | 0.62  | 0.62  |  | 9.9                                        | 9.6   | 9.6   | 10.1  | 9.6   | 10.0  | 9.7   | 11.1  | 10.8  |  |
| MR5          | 0.94                                 | 0.97  | 0.96  | 0.91  | 0.28  | 0.03  | -0.03 | -0.07 | -0.06 |  | 40.7                                       | 38.0  | 32.2  | 26.2  | 5.3   | 0.4   | -0.5  | -1.0  | -0.8  |  |
| MR6          | 0.79                                 | 0.69  | 0.37  | 0.13  | -1.48 | -1.65 | -1.92 | -1.91 | -2.14 |  | 36.9                                       | 27.1  | 12.1  | 3.6   | -25.9 | -26.1 | -28.2 | -27.5 | -29.4 |  |
| LBR1         | 0.32                                 | 0.45  | 0.42  | 0.46  | 0.50  | 0.52  | 0.65  | 0.63  | 0.60  |  | 7.5                                        | 10.0  | 9.2   | 9.6   | 10.0  | 10.1  | 12.3  | 11.5  | 10.8  |  |
| LBR2         | 0.62                                 | 0.61  | 0.55  | 0.57  | 0.59  | 0.60  | 0.62  | 0.64  | 0.64  |  | 16.7                                       | 16.1  | 14.0  | 13.8  | 13.6  | 13.1  | 13.1  | 13.5  | 13.1  |  |
| LBR3         | -0.20                                | -0.12 | -0.09 | -0.04 | 0.01  | 0.06  | 0.13  | 0.08  | 0.10  |  | -5.7                                       | -3.5  | -2.4  | -1.1  | 0.2   | 1.5   | 3.2   | 1.8   | 2.2   |  |
| BR1          | 0.99                                 | 1.15  | 1.20  | 1.16  | 1.23  | 1.32  | 1.25  | 1.27  | 1.28  |  | 28.2                                       | 32.1  | 33.0  | 29.7  | 30.5  | 31.3  | 28.2  | 28.2  | 27.8  |  |
| BR2          | -0.26                                | 0.07  | 0.29  | 0.66  | 1.10  | 1.25  | 1.28  | 1.18  | 1.18  |  | -7.9                                       | 2.1   | 8.3   | 18.1  | 28.8  | 31.3  | 30.8  | 27.5  | 26.9  |  |
| BR3          | -0.70                                | -0.67 | -0.66 | -0.60 | -0.52 | -0.41 | -0.31 | -0.19 | -0.05 |  | -20.4                                      | -19.2 | -18.4 | -16.6 | -14.0 | -10.8 | -7.7  | -4.7  | -1.3  |  |
| SCh1         | 0.04                                 | 0.08  | 0.12  | 0.14  | 0.16  | 0.12  | 0.10  | 0.10  | 0.11  |  | 1.3                                        | 2.2   | 3.2   | 3.7   | 4.2   | 3.0   | 2.4   | 2.4   | 2.6   |  |
| SCh2         | 0.19                                 | 0.16  | 0.16  | 0.18  | 0.17  | 0.16  | 0.13  | 0.13  | 0.11  |  | 4.8                                        | 4.1   | 4.0   | 4.3   | 3.9   | 3.6   | 2.8   | 2.8   | 2.4   |  |
| SR           | 0.00                                 | 0.00  | 0.00  | -0.01 | -0.01 | 0.00  | -0.01 | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR         | 0.43                                 | 0.60  | 0.62  | 0.72  | 0.84  | 0.97  | 1.01  | 1.03  | 1.07  |  | 9.1                                        | 12.1  | 12.1  | 13.3  | 14.5  | 15.9  | 16.0  | 16.1  | 16.3  |  |

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## **46 ft Channel Depth**

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
Scenario: WASP-1997-4ftonly

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.93                   | 4    | 4.05 | 4.22 | 4.35 | 4.48 | 4.59 | 4.62 | 4.68 |
| FR2  | 3.66                   | 3.76 | 3.84 | 4.01 | 4.15 | 4.32 | 4.48 | 4.53 | 4.59 |
| FR3  | 3.51                   | 3.57 | 3.61 | 3.83 | 3.97 | 4.14 | 4.51 | 4.95 | 5.39 |
| FR4  | 3.52                   | 3.58 | 3.63 | 3.84 | 3.99 | 4.13 | 4.52 | 4.95 | 5.55 |
| FR5  | 3.68                   | 3.78 | 3.88 | 4.02 | 4.27 | 4.59 | 4.86 | 5.23 | 5.48 |
| FR6  | 3.71                   | 3.78 | 3.87 | 4.01 | 4.13 | 4.34 | 4.93 | 5.23 | 5.47 |
| FR7  | 4.05                   | 4.15 | 4.21 | 4.35 | 4.58 | 5.2  | 5.98 | 6.22 | 6.37 |
| FR8  | 4.46                   | 4.55 | 4.68 | 4.99 | 5.82 | 6.28 | 6.56 | 6.69 | 6.85 |
| FR9  | 4.63                   | 4.74 | 4.9  | 5.21 | 5.93 | 6.45 | 6.72 | 6.82 | 7.05 |
| FR10 | 4.33                   | 4.81 | 4.97 | 5.32 | 5.91 | 6.42 | 6.69 | 7.02 | 7.22 |
| FR11 | 4.22                   | 4.65 | 4.94 | 5.25 | 5.65 | 6.14 | 6.51 | 6.66 | 7.16 |
| MR1  | 4.28                   | 4.36 | 4.43 | 4.66 | 4.94 | 5.26 | 5.52 | 5.69 | 6    |
| MR2  | 4                      | 4.14 | 4.3  | 4.55 | 4.91 | 5.28 | 5.56 | 5.69 | 5.82 |
| MR3  | 3.72                   | 3.89 | 3.97 | 4.17 | 4.46 | 4.93 | 5.59 | 5.86 | 6.22 |
| MR4  | 4.01                   | 4.16 | 4.28 | 4.46 | 4.72 | 4.98 | 5.14 | 5.31 | 5.51 |
| MR5  | 1.49                   | 2.06 | 2.49 | 3.08 | 4.85 | 6.23 | 6.57 | 6.91 | 7.11 |
| MR6  | 2.11                   | 2.53 | 3.02 | 3.55 | 5.59 | 6.37 | 6.81 | 7.07 | 7.33 |
| LBR1 | 3.59                   | 4.35 | 4.77 | 5.2  | 5.44 | 5.68 | 5.99 | 6.16 | 6.5  |
| LBR2 | 3.47                   | 3.87 | 3.97 | 4.17 | 4.41 | 4.6  | 4.8  | 4.86 | 5.49 |
| LBR3 | 3.04                   | 3.39 | 3.52 | 3.84 | 4.15 | 4.57 | 4.82 | 5.05 | 5.28 |
| BR1  | 3.26                   | 3.41 | 3.57 | 3.72 | 3.95 | 4.16 | 4.38 | 4.45 | 4.62 |
| BR2  | 2.57                   | 2.84 | 3.03 | 3.33 | 3.68 | 3.99 | 4.16 | 4.32 | 4.39 |
| BR3  | 3.02                   | 3.18 | 3.34 | 3.53 | 3.69 | 3.89 | 4.02 | 4.09 | 4.22 |
| SCH1 | 2.36                   | 2.57 | 2.68 | 2.88 | 3.18 | 4.04 | 4.34 | 4.47 | 4.62 |
| SCH2 | 3.72                   | 3.86 | 3.95 | 4.08 | 4.27 | 4.4  | 4.53 | 4.6  | 4.74 |
| SR   | 4.68                   | 4.74 | 4.97 | 5.31 | 5.62 | 5.97 | 6.11 | 6.16 | 6.23 |
| StbR | 3.66                   | 4.35 | 4.59 | 5.14 | 5.68 | 6.09 | 6.38 | 6.53 | 6.82 |

Delta D.O. Percentiles for Critical Cells  
Baseline: Scenario: WASP1997Existing  
Project: Scenario: WASP-1997-4ftonly

| Zone | Delta D.O. Percentile |      |       |      |       |      |       |      |       |      |       |       |
|------|-----------------------|------|-------|------|-------|------|-------|------|-------|------|-------|-------|
|      | 1%                    |      | 5%    |      | 10%   |      | 25%   |      | 50%   |      | 75%   |       |
|      | mg/l                  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %     |
| FR1  | 0.01                  | 0.3  | 0.01  | 0.3  | 0     | 0.0  | 0     | 0.0  | -0.03 | -0.7 | -0.04 | -0.9  |
| FR2  | 0                     | 0.0  | 0     | 0.0  | 0     | 0.0  | -0.02 | -0.5 | -0.07 | -1.7 | -0.08 | -1.8  |
| FR3  | 0.02                  | 0.6  | -0.02 | -0.6 | -0.03 | -0.8 | -0.04 | -1.0 | -0.08 | -2.0 | -0.15 | -3.5  |
| FR4  | 0.02                  | 0.6  | 0.02  | 0.6  | 0.01  | 0.3  | -0.08 | -2.0 | -0.08 | -2.0 | -0.27 | -6.1  |
| FR5  | 0.06                  | 1.7  | 0.04  | 1.1  | -0.01 | -0.3 | -0.06 | -1.5 | -0.04 | -0.9 | -0.3  | -6.1  |
| FR6  | 0.02                  | 0.5  | 0.02  | 0.5  | -0.02 | -0.5 | -0.11 | -2.7 | -0.13 | -3.1 | -0.44 | -9.2  |
| FR7  | -0.12                 | -2.9 | -0.1  | -2.4 | -0.12 | -2.8 | -0.26 | -5.6 | -0.45 | -8.9 | -0.78 | -13.0 |
| FR8  | -0.2                  | -4.3 | -0.23 | -4.8 | -0.38 | -7.5 | -0.52 | -9.4 | -0.3  | -4.9 | -0.16 | -2.5  |
| FR9  | -0.25                 | -5.1 | -0.29 | -5.8 | -0.43 | -8.1 | -0.51 | -8.9 | -0.35 | -5.6 | -0.15 | -2.3  |
| FR10 | 0.02                  | 0.5  | 0.03  | 0.6  | 0.02  | 0.4  | 0     | 0.0  | 0     | 0.0  | -0.01 | -0.2  |
| FR11 | 0.05                  | 1.2  | -0.05 | -1.1 | 0.01  | 0.2  | 0.01  | 0.2  | -0.02 | -0.4 | 0     | 0.0   |
| MR1  | -0.13                 | -2.9 | -0.17 | -3.8 | -0.19 | -4.1 | -0.23 | -4.7 | -0.22 | -4.3 | -0.33 | -5.9  |
| MR2  | -0.03                 | -0.7 | -0.01 | -0.2 | -0.03 | -0.7 | -0.07 | -1.5 | -0.18 | -3.2 | -0.25 | -4.5  |
| MR3  | 0.02                  | 0.5  | 0     | 0.0  | -0.03 | -0.7 | -0.02 | -0.5 | -0.06 | -1.3 | -0.14 | -2.8  |
| MR4  | 0.12                  | 3.1  | 0.13  | 3.2  | 0.16  | 3.9  | 0.07  | 1.6  | 0.11  | 2.4  | 0.09  | 1.8   |
| MR5  | 0                     | 0.0  | 0.02  | 1.0  | 0.08  | 3.3  | 0.03  | 1.0  | -0.12 | -2.4 | 0     | 0.0   |
| MR6  | 0                     | 0.0  | 0.04  | 1.6  | 0.01  | 0.3  | 0.04  | 1.1  | -0.02 | -0.4 | 0.01  | 0.2   |
| LBR1 | 0.02                  | 0.6  | 0     | 0.0  | 0.02  | 0.4  | 0.07  | 1.4  | 0.01  | 0.2  | 0.04  | 0.7   |
| LBR2 | -0.22                 | -6.0 | 0.01  | 0.3  | 0     | 0.0  | 0.01  | 0.2  | 0.02  | 0.5  | 0     | 0.0   |
| LBR3 | 0.15                  | 5.2  | 0.11  | 3.4  | 0.05  | 1.4  | 0.16  | 4.3  | 0.2   | 5.1  | 0.23  | 5.3   |
| BR1  | -0.02                 | -0.6 | 0     | 0.0  | 0     | 0.0  | -0.02 | -0.5 | -0.02 | -0.5 | -0.04 | -1.0  |
| BR2  | 0.02                  | 0.8  | 0     | 0.0  | 0.04  | 1.3  | 0.09  | 2.8  | 0.24  | 7.0  | 0.29  | 7.8   |
| BR3  | -0.01                 | -0.3 | -0.08 | -2.5 | -0.1  | -2.9 | -0.09 | -2.5 | -0.09 | -2.4 | -0.06 | -1.5  |
| SCH1 | -0.03                 | -1.3 | 0     | 0.0  | 0     | 0.0  | 0.05  | 1.8  | 0.17  | 5.6  | 0.63  | 18.5  |
| SCH2 | -0.02                 | -0.5 | -0.05 | -1.3 | -0.06 | -1.5 | -0.06 | -1.4 | -0.06 | -1.4 | -0.07 | -1.6  |
| SR   | -0.01                 | -0.2 | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0   |
| SibR | -0.18                 | -4.7 | 0.13  | 3.1  | 0.02  | 0.4  | 0.1   | 2.0  | -0.01 | -0.2 | -0.11 | -1.8  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31  
 Project Scenario: WASP-1997-4ftonly

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.14                                  | 4.22 | 4.27 | 4.37 | 4.48 | 4.58 | 4.68 | 4.75 | 4.82 |
| FR2       | 3.96                                  | 4.00 | 4.04 | 4.23 | 4.34 | 4.47 | 4.58 | 4.62 | 4.67 |
| FR3       | 3.74                                  | 3.79 | 3.85 | 4.01 | 4.14 | 4.29 | 4.49 | 4.55 | 4.62 |
| FR4       | 3.68                                  | 3.72 | 3.76 | 3.93 | 4.04 | 4.19 | 4.54 | 4.76 | 5.04 |
| FR5       | 3.72                                  | 3.77 | 3.84 | 4.01 | 4.14 | 4.36 | 4.84 | 5.14 | 5.36 |
| FR6       | 3.93                                  | 3.96 | 4.01 | 4.18 | 4.30 | 4.64 | 5.26 | 5.51 | 5.69 |
| FR7       | 4.31                                  | 4.38 | 4.48 | 4.72 | 5.37 | 5.94 | 6.21 | 6.36 | 6.48 |
| FR8       | 4.63                                  | 4.78 | 4.90 | 5.24 | 5.89 | 6.28 | 6.52 | 6.67 | 6.80 |
| FR9       | 5.30                                  | 5.57 | 5.73 | 6.07 | 6.41 | 6.72 | 6.97 | 7.16 | 7.28 |
| FR10      | 5.70                                  | 5.85 | 6.02 | 6.30 | 6.56 | 6.81 | 7.17 | 7.22 | 7.32 |
| FR11      | 4.87                                  | 5.10 | 5.27 | 5.59 | 5.88 | 6.18 | 6.45 | 6.56 | 6.68 |
| MR1       | 4.32                                  | 4.41 | 4.53 | 4.71 | 4.96 | 5.26 | 5.52 | 5.61 | 5.76 |
| MR2       | 4.15                                  | 4.29 | 4.44 | 4.65 | 4.94 | 5.23 | 5.53 | 5.61 | 5.72 |
| MR3       | 3.87                                  | 4.02 | 4.08 | 4.36 | 4.66 | 5.08 | 5.45 | 5.55 | 5.70 |
| MR4       | 4.41                                  | 4.52 | 4.62 | 4.79 | 5.05 | 5.24 | 5.45 | 5.60 | 5.71 |
| MR5       | 2.29                                  | 2.57 | 2.99 | 3.51 | 5.25 | 6.16 | 6.53 | 6.81 | 7.03 |
| MR6       | 2.14                                  | 2.57 | 3.09 | 3.59 | 5.69 | 6.33 | 6.80 | 6.95 | 7.27 |
| LBR1      | 4.30                                  | 4.51 | 4.59 | 4.84 | 5.02 | 5.21 | 5.32 | 5.48 | 5.58 |
| LBR2      | 3.70                                  | 3.81 | 3.97 | 4.15 | 4.37 | 4.55 | 4.74 | 4.80 | 4.93 |
| LBR3      | 3.61                                  | 3.69 | 3.74 | 3.85 | 4.01 | 4.16 | 4.34 | 4.43 | 4.50 |
| BR1       | 3.53                                  | 3.58 | 3.64 | 3.87 | 4.00 | 4.16 | 4.36 | 4.43 | 4.52 |
| BR2       | 3.29                                  | 3.36 | 3.44 | 3.59 | 3.79 | 3.96 | 4.09 | 4.25 | 4.34 |
| BR3       | 3.43                                  | 3.47 | 3.52 | 3.60 | 3.72 | 3.88 | 3.96 | 3.99 | 4.04 |
| SCh1      | 3.46                                  | 3.54 | 3.61 | 3.71 | 3.83 | 3.93 | 4.02 | 4.08 | 4.15 |
| SCh2      | 3.92                                  | 4.02 | 4.08 | 4.21 | 4.33 | 4.44 | 4.54 | 4.60 | 4.67 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.84 | 6.17 | 6.35 | 6.41 | 6.48 |
| StbR      | 4.60                                  | 4.80 | 4.96 | 5.29 | 5.61 | 5.90 | 6.11 | 6.20 | 6.39 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline scenario: WASP1997Existing

Project scenario: WASP-1997-4ftonly

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |      | Project - Baseline Relative Difference (%) |      |      |      |       |       |       |      |      |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------------------------------------------|------|------|------|-------|-------|-------|------|------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |      | 1%                                         | 5%   | 10%  | 25%  | 50%   | 75%   | 90%   | 95%  | 99%  |  |
| FR1       | 0.02                                 | 0.02  | 0.01  | 0.00  | -0.01 | -0.01 | -0.04 | -0.05 | -0.02 |      | 0.4                                        | 0.5  | 0.2  | 0.0  | -0.3  | -0.2  | -0.8  | -1.0 | -0.4 |  |
| FR2       | 0.02                                 | 0.01  | 0.01  | -0.03 | -0.04 | -0.06 | -0.07 | -0.07 | -0.09 | 0.5  | 0.2                                        | 0.2  | -0.7 | -0.8 | -1.4  | -1.5  | -1.5  | -1.8 | -1.8 |  |
| FR3       | 0.04                                 | 0.02  | 0.02  | -0.02 | -0.05 | -0.09 | -0.23 | -0.24 | -0.37 | 1.0  | 0.6                                        | 0.5  | 0.5  | -0.5 | -1.2  | -2.0  | -4.8  | -4.9 | -7.4 |  |
| FR4       | 0.02                                 | 0.02  | 0.01  | -0.06 | -0.08 | -0.18 | -0.39 | -0.55 | -0.50 | 0.5  | 0.5                                        | 0.3  | -1.5 | -2.0 | -4.0  | -8.0  | -10.3 | -9.1 |      |  |
| FR5       | 0.04                                 | 0.01  | -0.05 | -0.07 | -0.14 | -0.41 | -0.57 | -0.50 | -0.44 | 1.1  | 0.3                                        | -1.2 | -1.6 | -3.2 | -8.5  | -10.6 | -8.9  | -7.6 |      |  |
| FR6       | -0.02                                | -0.05 | -0.10 | -0.14 | -0.24 | -0.55 | -0.52 | -0.41 | -0.35 | -0.6 | -1.3                                       | -2.4 | -3.2 | -5.3 | -10.7 | -8.9  | -6.9  | -5.8 |      |  |
| FR7       | -0.13                                | -0.17 | -0.21 | -0.37 | -0.49 | -0.24 | -0.20 | -0.21 | -0.22 | -2.9 | -3.7                                       | -4.5 | -7.3 | -8.3 | -3.9  | -3.2  | -3.1  | -3.3 |      |  |
| FR8       | -0.23                                | -0.27 | -0.39 | -0.42 | -0.27 | -0.15 | -0.15 | -0.13 | -0.18 | -4.8 | -5.4                                       | -7.3 | -7.4 | -4.3 | -2.4  | -2.3  | -1.9  | -2.6 |      |  |
| FR9       | -0.37                                | -0.33 | -0.29 | -0.19 | -0.13 | -0.09 | -0.10 | -0.07 | -0.05 | -6.6 | -5.6                                       | -4.8 | -3.1 | -2.0 | -1.3  | -1.4  | -0.9  | -0.7 |      |  |
| FR10      | -0.01                                | 0.00  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | -0.02 | 0.00  | -0.2 | 0.0                                        | 0.1  | 0.0  | -0.1 | 0.1   | 0.0   | -0.3  | 0.0  |      |  |
| FR11      | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | 0.01  | 0.0  | 0.0                                        | 0.1  | 0.1  | 0.1  | 0.0   | 0.0   | 0.1   | 0.1  |      |  |
| MR1       | -0.16                                | -0.17 | -0.17 | -0.18 | -0.22 | -0.28 | -0.33 | -0.36 | -0.28 | -3.6 | -3.7                                       | -3.6 | -3.7 | -4.2 | -5.0  | -5.6  | -6.0  | -4.6 |      |  |
| MR2       | -0.04                                | -0.03 | -0.07 | -0.13 | -0.19 | -0.27 | -0.27 | -0.30 | -0.31 | -1.1 | -0.6                                       | -1.6 | -2.8 | -3.7 | -4.9  | -4.7  | -5.0  | -5.2 |      |  |
| MR3       | 0.02                                 | -0.02 | -0.02 | -0.02 | -0.08 | -0.14 | -0.14 | -0.18 | -0.15 | 0.4  | -0.5                                       | -0.6 | -0.5 | -1.6 | -2.7  | -2.5  | -3.1  | -2.5 |      |  |
| MR4       | 0.02                                 | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.01  | 0.05  | 0.01  | 0.4  | 0.3                                        | 0.2  | 0.2  | 0.0  | -0.1  | 0.1   | 1.0   | 0.2  |      |  |
| MR5       | -0.02                                | 0.01  | 0.02  | 0.05  | -0.08 | 0.00  | 0.00  | -0.01 | 0.02  | -0.9 | 0.5                                        | 0.7  | 1.5  | -1.5 | 0.0   | 0.0   | -0.2  | 0.3  |      |  |
| MR6       | 0.00                                 | 0.04  | 0.04  | 0.01  | 0.00  | 0.00  | 0.00  | 0.01  | 0.00  | -0.1 | 1.5                                        | 1.2  | 0.3  | 0.0  | 0.0   | 0.0   | 0.1   | 0.0  |      |  |
| LBR1      | 0.00                                 | 0.01  | 0.00  | 0.04  | 0.03  | 0.02  | 0.02  | 0.03  | 0.01  | 0.1  | 0.3                                        | 0.1  | 0.9  | 0.6  | 0.3   | 0.4   | 0.6   | 0.2  |      |  |
| LBR2      | 0.00                                 | 0.00  | 0.01  | 0.01  | 0.01  | 0.00  | 0.03  | 0.03  | 0.04  | -0.1 | 0.3                                        | 0.2  | 0.4  | 0.3  | 0.0   | 0.7   | 0.6   | 0.8  |      |  |
| LBR3      | 0.07                                 | 0.11  | 0.09  | 0.07  | 0.06  | 0.05  | 0.10  | 0.09  | 0.04  | 2.0  | 3.1                                        | 2.4  | 1.8  | 1.4  | 1.2   | 2.3   | 2.0   | 0.9  |      |  |
| BR1       | 0.00                                 | -0.01 | 0.00  | -0.03 | -0.04 | -0.05 | -0.07 | -0.07 | -0.09 | 0.1  | -0.2                                       | -0.1 | -0.7 | -1.0 | -1.2  | -1.6  | -1.6  | -1.8 |      |  |
| BR2       | -0.01                                | -0.02 | -0.01 | -0.03 | -0.03 | -0.03 | -0.05 | -0.05 | -0.05 | -0.3 | -0.7                                       | -0.4 | -0.8 | -0.7 | -0.9  | -1.2  | -1.1  | -1.2 |      |  |
| BR3       | -0.03                                | -0.04 | -0.04 | -0.03 | -0.02 | 0.03  | -0.01 | 0.00  | 0.02  | -0.9 | -1.1                                       | -1.1 | -0.7 | -0.6 | 0.9   | -0.2  | -0.1  | 0.5  |      |  |
| SCh1      | -0.05                                | -0.02 | -0.02 | -0.01 | 0.00  | -0.02 | -0.02 | -0.02 | -0.01 | -1.3 | -0.6                                       | -0.6 | -0.4 | 0.0  | -0.6  | -0.5  | -0.4  | -0.3 |      |  |
| SCh2      | -0.02                                | -0.02 | -0.01 | -0.04 | -0.04 | -0.06 | -0.07 | -0.05 | -0.06 | -0.5 | -0.5                                       | -0.3 | -0.9 | -1.0 | -1.2  | -1.5  | -1.1  | -1.2 |      |  |
| SR        | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.0  | 0.0                                        | 0.0  | 0.0  | 0.1  | 0.0   | 0.0   | 0.0   | 0.0  |      |  |
| StbR      | -0.15                                | -0.13 | -0.13 | -0.15 | -0.19 | -0.19 | -0.19 | -0.22 | -0.17 | -3.1 | -2.6                                       | -2.5 | -2.8 | -3.2 | -3.0  | -3.0  | -3.5  | -2.6 |      |  |

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# **46 ft Channel Depth**

*Mitigation Plan 6a*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
 Scenario: WASP-1997-Plan6a\_4ft

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.92                   | 3.97 | 4.02 | 4.21 | 4.33 | 4.49 | 4.59 | 4.64 | 4.68 |
| FR2  | 3.59                   | 4.06 | 4.16 | 4.3  | 4.47 | 4.61 | 4.78 | 4.83 | 4.94 |
| FR3  | 3.59                   | 3.64 | 3.68 | 3.93 | 4.05 | 4.23 | 4.65 | 5.16 | 5.52 |
| FR4  | 3.59                   | 3.64 | 3.7  | 3.93 | 4.06 | 4.23 | 4.65 | 5.12 | 5.6  |
| FR5  | 3.72                   | 3.75 | 3.82 | 4.02 | 4.14 | 4.3  | 4.82 | 5.03 | 5.21 |
| FR6  | 3.74                   | 3.83 | 3.9  | 4.08 | 4.21 | 4.4  | 5    | 5.33 | 5.48 |
| FR7  | 4.33                   | 4.56 | 4.68 | 4.95 | 5.48 | 6    | 6.31 | 6.5  | 7.14 |
| FR8  | 4.44                   | 4.51 | 4.65 | 4.93 | 5.73 | 6.2  | 6.51 | 6.62 | 6.78 |
| FR9  | 4.6                    | 4.68 | 4.86 | 5.12 | 5.88 | 6.38 | 6.66 | 6.75 | 7.01 |
| FR10 | 4.69                   | 5.04 | 5.22 | 5.56 | 5.9  | 6.31 | 6.6  | 6.86 | 7.15 |
| FR11 | 4.18                   | 4.58 | 4.81 | 5.11 | 5.66 | 6.14 | 6.4  | 6.66 | 6.93 |
| MR1  | 4.24                   | 4.37 | 4.48 | 4.69 | 4.97 | 5.22 | 5.57 | 5.73 | 6.1  |
| MR2  | 4.24                   | 4.38 | 4.49 | 4.72 | 5.01 | 5.27 | 5.58 | 5.72 | 5.83 |
| MR3  | 4.22                   | 4.3  | 4.43 | 4.66 | 4.91 | 5.13 | 5.34 | 5.46 | 5.71 |
| MR4  | 4.36                   | 4.45 | 4.59 | 4.78 | 5.06 | 5.34 | 5.57 | 5.69 | 5.98 |
| MR5  | 2.2                    | 2.78 | 3.12 | 3.86 | 5.35 | 6.2  | 6.53 | 6.78 | 7.04 |
| MR6  | 6.14                   | 6.32 | 6.46 | 6.64 | 6.9  | 7.23 | 7.41 | 7.51 | 7.61 |
| LBR1 | 4.03                   | 4.81 | 5.13 | 5.49 | 5.8  | 6.1  | 6.32 | 6.55 | 6.68 |
| LBR2 | 3.69                   | 4.56 | 4.68 | 4.93 | 5.14 | 5.38 | 5.55 | 5.68 | 5.8  |
| LBR3 | 2.59                   | 2.68 | 2.84 | 3.06 | 3.33 | 3.64 | 3.81 | 3.89 | 4.04 |
| BR1  | 1.74                   | 2.03 | 2.61 | 3.41 | 4.06 | 4.68 | 4.94 | 5.01 | 5.1  |
| BR2  | 1.41                   | 1.79 | 1.99 | 2.42 | 2.93 | 3.55 | 3.86 | 3.99 | 4.16 |
| BR3  | 1.62                   | 1.85 | 1.99 | 2.16 | 2.41 | 2.82 | 3.34 | 3.49 | 3.66 |
| SCH1 | 2.28                   | 2.47 | 2.7  | 2.9  | 3.05 | 3.28 | 3.61 | 3.8  | 4    |
| SCH2 | 3.7                    | 3.86 | 3.95 | 4.09 | 4.27 | 4.4  | 4.54 | 4.62 | 4.77 |
| SR   | 4.68                   | 4.74 | 4.96 | 5.3  | 5.61 | 5.96 | 6.1  | 6.15 | 6.22 |
| StbR | 3.82                   | 4.32 | 4.64 | 5.15 | 5.67 | 6.11 | 6.36 | 6.49 | 6.65 |

**Delta D.O. Percentiles for Critical Cells**  
 Baseline: WASP1997Existing  
 Project: WASP-1997-Plan6a\_4ft

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |
|      | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1  | 0                     | 0.0   | -0.02 | -0.5  | -0.03 | -0.7  | -0.01 | -0.2  | -0.05 | -1.1  | -0.03 | -0.7  | -0.04 | -0.9  | -0.06 | -1.3  | -0.06 | -1.3  |
| FR2  | -0.07                 | -1.9  | 0.3   | 8.0   | 0.32  | 8.3   | 0.27  | 6.7   | 0.25  | 5.9   | 0.21  | 4.8   | 0.16  | 3.5   | 0.14  | 3.0   | -0.14 | -2.8  |
| FR3  | 0.1                   | 2.9   | 0.05  | 1.4   | 0.04  | 1.1   | 0.06  | 1.6   | 0     | 0.0   | -0.06 | -1.4  | -0.13 | -2.7  | 0.09  | 1.8   | -0.08 | -1.4  |
| FR4  | 0.09                  | 2.6   | 0.06  | 2.2   | 0.08  | 2.2   | 0.01  | 0.3   | -0.01 | -0.2  | -0.17 | -3.9  | -0.31 | -6.2  | -0.19 | -3.6  | 0.1   | 1.8   |
| FR5  | 0.1                   | 2.8   | 0.01  | 0.3   | -0.07 | -1.8  | -0.08 | -1.5  | -0.17 | -3.9  | -0.59 | -12.1 | -0.6  | -11.1 | -0.6  | -10.7 | -0.57 | -9.9  |
| FR6  | 0.05                  | 1.4   | 0.07  | 1.9   | 0.01  | 0.3   | -0.04 | -1.0  | -0.05 | -1.2  | -0.38 | -7.9  | -0.57 | -10.2 | -0.44 | -7.6  | -0.43 | -7.3  |
| FR7  | 0.16                  | 3.9   | 0.31  | 7.3   | 0.35  | 8.1   | 0.34  | 7.4   | 0.45  | 8.9   | 0.02  | 0.3   | 0.05  | 0.8   | 0.14  | 2.2   | 0.65  | 10.0  |
| FR8  | -0.22                 | -4.7  | -0.27 | -5.6  | -0.41 | -8.1  | -0.58 | -10.5 | -0.38 | -8.4  | -0.24 | -3.7  | -0.21 | -3.1  | -0.23 | -3.4  | -0.33 | -4.6  |
| FR9  | -0.28                 | -5.7  | -0.35 | -7.0  | -0.47 | -8.8  | -0.6  | -10.5 | -0.4  | -6.4  | -0.22 | -3.3  | -0.19 | -2.8  | -0.27 | -3.8  | -0.18 | -2.5  |
| FR10 | 0.38                  | 8.8   | 0.26  | 5.4   | 0.27  | 5.5   | 0.24  | 4.5   | -0.01 | -0.2  | -0.12 | -1.9  | -0.08 | -1.2  | -0.15 | -2.1  | -0.07 | -1.0  |
| FR11 | 0.01                  | 0.2   | -0.12 | -2.6  | -0.12 | -2.4  | -0.13 | -2.5  | -0.01 | -0.2  | 0     | 0.0   | -0.1  | -1.5  | 0.02  | 0.3   | -0.2  | -2.8  |
| MR1  | -0.17                 | -3.9  | -0.16 | -3.5  | -0.14 | -3.0  | -0.2  | -4.1  | -0.19 | -3.7  | -0.37 | -6.6  | -0.32 | -5.4  | -0.27 | -4.5  | -0.12 | -1.9  |
| MR2  | 0.21                  | 5.2   | 0.23  | 5.5   | 0.16  | 3.7   | 0.1   | 2.2   | -0.06 | -1.2  | -0.26 | -4.7  | -0.22 | -3.8  | -0.18 | -3.1  | -0.2  | -3.3  |
| MR3  | 0.52                  | 14.1  | 0.41  | 10.5  | 0.43  | 10.8  | 0.47  | 11.2  | 0.39  | 8.6   | 0.06  | 1.2   | -0.37 | -6.5  | -0.47 | -7.9  | -0.48 | -7.8  |
| MR4  | 0.47                  | 12.1  | 0.42  | 10.4  | 0.47  | 11.4  | 0.39  | 8.9   | 0.45  | 9.8   | 0.45  | 9.2   | 0.51  | 10.1  | 0.51  | 9.8   | 0.57  | 10.5  |
| MR5  | 0.71                  | 47.7  | 0.74  | 36.3  | 0.71  | 29.5  | 0.81  | 26.6  | 0.38  | 7.6   | -0.03 | -0.5  | -0.04 | -0.6  | -0.11 | -1.6  | -0.07 | -1.0  |
| MR6  | 4.03                  | 191.0 | 3.83  | 153.8 | 3.45  | 114.6 | 3.13  | 89.2  | 1.29  | 23.0  | 0.87  | 13.7  | 0.61  | 9.0   | 0.45  | 6.4   | 0.29  | 4.0   |
| LBR1 | 0.46                  | 12.9  | 0.46  | 10.6  | 0.38  | 8.0   | 0.36  | 7.0   | 0.37  | 6.8   | 0.46  | 8.2   | 0.35  | 5.9   | 0.39  | 6.3   | 0.21  | 3.2   |
| LBR2 | 0                     | 0.0   | 0.7   | 18.1  | 0.71  | 17.9  | 0.77  | 18.5  | 0.75  | 17.1  | 0.78  | 17.0  | 0.78  | 16.4  | 0.8   | 16.4  | 0.54  | 10.3  |
| LBR3 | -0.3                  | -10.4 | -0.6  | -18.3 | -0.63 | -18.2 | -0.62 | -16.8 | -0.62 | -15.7 | -0.7  | -16.1 | -0.82 | -19.5 | -1.1  | -22.0 | -1.2  | -22.9 |
| BR1  | -1.54                 | -47.0 | -1.38 | -40.5 | -0.96 | -26.9 | -0.33 | -8.8  | 0.09  | 2.3   | 0.48  | 11.4  | 0.51  | 11.5  | 0.48  | 10.6  | 0.46  | 9.9   |
| BR2  | -1.14                 | -44.7 | -1.05 | -37.0 | -1    | -33.4 | -0.82 | -25.3 | -0.51 | -14.8 | -0.15 | -4.1  | 0.02  | 0.5   | 0.06  | 1.5   | 0.13  | 3.2   |
| BR3  | -1.41                 | -46.5 | -1.41 | -43.3 | -1.45 | -42.2 | -1.46 | -40.3 | -1.37 | -36.2 | -1.13 | -28.6 | -0.74 | -18.1 | -0.66 | -15.9 | -0.59 | -13.9 |
| SCH1 | -0.11                 | -4.6  | -0.1  | -3.9  | 0.02  | 0.7   | 0.07  | 2.5   | 0.04  | 1.3   | -0.13 | -2.8  | -0.16 | -4.2  | -0.09 | -2.3  | -0.14 | -3.4  |
| SCH2 | -0.04                 | -1.1  | -0.05 | -1.3  | -0.06 | -1.5  | -0.05 | -1.2  | -0.06 | -1.4  | -0.07 | -1.6  | -0.06 | -1.3  | -0.06 | -1.3  | -0.05 | -1.0  |
| SR   | -0.01                 | -0.2  | 0     | 0.0   | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |
| SubR | -0.02                 | -0.5  | 0.1   | 2.4   | 0.07  | 1.5   | 0.11  | 2.2   | -0.02 | -0.4  | -0.08 | -1.5  | -0.13 | -2.0  | -0.15 | -2.3  | -0.19 | -2.8  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Project Scenario: WASP-1997-Plan6a\_4ft

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.12                                  | 4.20 | 4.26 | 4.37 | 4.48 | 4.57 | 4.65 | 4.73 | 4.78 |
| FR2       | 3.96                                  | 3.99 | 4.03 | 4.26 | 4.38 | 4.52 | 4.63 | 4.66 | 4.72 |
| FR3       | 3.77                                  | 3.83 | 3.88 | 4.08 | 4.21 | 4.36 | 4.56 | 4.64 | 4.71 |
| FR4       | 3.73                                  | 3.76 | 3.79 | 4.02 | 4.12 | 4.28 | 4.64 | 4.84 | 5.10 |
| FR5       | 3.77                                  | 3.83 | 3.92 | 4.09 | 4.22 | 4.43 | 4.92 | 5.22 | 5.40 |
| FR6       | 3.94                                  | 3.98 | 4.03 | 4.25 | 4.35 | 4.67 | 5.27 | 5.57 | 5.71 |
| FR7       | 4.28                                  | 4.39 | 4.48 | 4.70 | 5.27 | 5.87 | 6.17 | 6.34 | 6.42 |
| FR8       | 4.61                                  | 4.75 | 4.84 | 5.15 | 5.83 | 6.24 | 6.47 | 6.58 | 6.70 |
| FR9       | 5.22                                  | 5.43 | 5.60 | 5.94 | 6.38 | 6.66 | 6.92 | 7.11 | 7.24 |
| FR10      | 5.46                                  | 5.76 | 5.90 | 6.15 | 6.48 | 6.73 | 7.09 | 7.19 | 7.29 |
| FR11      | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.49 | 5.76 | 5.99 | 6.12 | 6.30 |
| MR1       | 4.31                                  | 4.45 | 4.56 | 4.73 | 4.99 | 5.24 | 5.53 | 5.64 | 5.81 |
| MR2       | 4.26                                  | 4.41 | 4.57 | 4.78 | 5.00 | 5.21 | 5.52 | 5.68 | 5.77 |
| MR3       | 4.31                                  | 4.42 | 4.53 | 4.74 | 4.96 | 5.18 | 5.33 | 5.40 | 5.55 |
| MR4       | 4.76                                  | 4.91 | 5.03 | 5.23 | 5.52 | 5.74 | 5.96 | 6.14 | 6.30 |
| MR5       | 3.26                                  | 3.52 | 3.91 | 4.36 | 5.62 | 6.18 | 6.49 | 6.75 | 6.95 |
| MR6       | 2.95                                  | 3.23 | 3.43 | 3.71 | 4.22 | 4.67 | 4.89 | 5.04 | 5.14 |
| LBR1      | 4.61                                  | 4.94 | 5.00 | 5.25 | 5.49 | 5.72 | 5.95 | 6.07 | 6.17 |
| LBR2      | 4.31                                  | 4.41 | 4.51 | 4.71 | 4.94 | 5.16 | 5.32 | 5.41 | 5.55 |
| LBR3      | 3.35                                  | 3.45 | 3.57 | 3.74 | 3.95 | 4.17 | 4.36 | 4.43 | 4.56 |
| BR1       | 2.52                                  | 3.18 | 3.54 | 4.02 | 4.28 | 4.51 | 4.67 | 4.71 | 4.84 |
| BR2       | 1.82                                  | 2.06 | 2.21 | 2.62 | 3.18 | 3.66 | 3.99 | 4.12 | 4.31 |
| BR3       | 2.18                                  | 2.28 | 2.38 | 2.54 | 2.66 | 2.84 | 2.97 | 3.05 | 3.11 |
| SCh1      | 3.39                                  | 3.51 | 3.61 | 3.73 | 3.84 | 3.94 | 4.01 | 4.05 | 4.13 |
| SCh2      | 3.92                                  | 4.01 | 4.07 | 4.22 | 4.34 | 4.47 | 4.55 | 4.61 | 4.68 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR      | 4.80                                  | 4.92 | 5.05 | 5.36 | 5.67 | 5.90 | 6.06 | 6.13 | 6.30 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 - AUGUST 31

Baseline:nario: WASP1997Existing

Project ario: WASP-1997-Plan6a\_4ft

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1       | -0.01                                | 0.00  | 0.00  | 0.00  | -0.02 | -0.03 | -0.07 | -0.07 | -0.06 |  | -0.1                                       | 0.0   | -0.1  | 0.0   | -0.4  | -0.6  | -1.5  | -1.5  | -1.3  |  |
| FR2       | 0.02                                 | 0.00  | 0.00  | 0.01  | 0.01  | -0.02 | -0.02 | -0.03 | -0.04 |  | 0.5                                        | 0.0   | 0.0   | 0.2   | 0.2   | -0.4  | -0.5  | -0.6  | -0.8  |  |
| FR3       | 0.07                                 | 0.06  | 0.05  | 0.05  | 0.02  | -0.02 | -0.15 | -0.15 | -0.28 |  | 2.0                                        | 1.5   | 1.4   | 1.2   | 0.4   | -0.6  | -3.2  | -3.1  | -5.6  |  |
| FR4       | 0.08                                 | 0.06  | 0.04  | 0.03  | 0.00  | -0.10 | -0.30 | -0.46 | -0.45 |  | 2.1                                        | 1.5   | 1.1   | 0.8   | 0.0   | -2.2  | -6.0  | -8.7  | -8.1  |  |
| FR5       | 0.09                                 | 0.07  | 0.04  | 0.01  | -0.05 | -0.34 | -0.50 | -0.43 | -0.39 |  | 2.5                                        | 1.7   | 0.9   | 0.3   | -1.3  | -7.0  | -9.2  | -7.6  | -6.8  |  |
| FR6       | -0.02                                | -0.03 | -0.08 | -0.07 | -0.19 | -0.53 | -0.51 | -0.36 | -0.33 |  | -0.4                                       | -0.8  | -1.9  | -1.6  | -4.2  | -10.1 | -8.7  | -6.0  | -5.5  |  |
| FR7       | -0.15                                | -0.16 | -0.21 | -0.39 | -0.58 | -0.31 | -0.24 | -0.23 | -0.28 |  | -3.5                                       | -3.6  | -4.4  | -7.6  | -10.0 | -5.0  | -3.8  | -3.5  | -4.1  |  |
| FR8       | -0.25                                | -0.30 | -0.44 | -0.51 | -0.32 | -0.19 | -0.21 | -0.23 | -0.28 |  | -5.2                                       | -6.0  | -8.4  | -8.9  | -5.2  | -3.0  | -3.1  | -3.3  | -4.0  |  |
| FR9       | -0.45                                | -0.48 | -0.41 | -0.32 | -0.16 | -0.15 | -0.15 | -0.11 | -0.10 |  | -8.0                                       | -8.1  | -6.9  | -5.1  | -2.4  | -2.2  | -2.1  | -1.6  | -1.4  |  |
| FR10      | -0.25                                | -0.09 | -0.11 | -0.15 | -0.09 | -0.08 | -0.07 | -0.05 | -0.03 |  | -4.4                                       | -1.5  | -1.9  | -2.4  | -1.4  | -1.2  | -1.0  | -0.7  | -0.4  |  |
| FR11      | -0.33                                | -0.35 | -0.36 | -0.41 | -0.39 | -0.42 | -0.46 | -0.43 | -0.38 |  | -6.8                                       | -6.9  | -6.9  | -7.3  | -6.6  | -6.7  | -7.1  | -6.6  | -5.7  |  |
| MR1       | -0.17                                | -0.14 | -0.14 | -0.16 | -0.19 | -0.30 | -0.32 | -0.32 | -0.23 |  | -3.8                                       | -2.9  | -3.0  | -3.4  | -3.6  | -5.3  | -5.5  | -5.4  | -3.9  |  |
| MR2       | 0.07                                 | 0.10  | 0.06  | -0.01 | -0.13 | -0.28 | -0.29 | -0.23 | -0.26 |  | 1.6                                        | 2.3   | 1.2   | -0.2  | -2.5  | -5.2  | -4.9  | -3.9  | -4.3  |  |
| MR3       | 0.46                                 | 0.38  | 0.42  | 0.35  | 0.23  | -0.05 | -0.26 | -0.32 | -0.30 |  | 11.9                                       | 9.4   | 10.3  | 8.1   | 4.8   | -0.9  | -4.6  | -5.6  | -5.2  |  |
| MR4       | 0.37                                 | 0.40  | 0.42  | 0.44  | 0.46  | 0.49  | 0.52  | 0.60  | 0.60  |  | 8.5                                        | 9.0   | 9.1   | 9.3   | 9.2   | 9.4   | 9.5   | 10.8  | 10.6  |  |
| MR5       | 0.94                                 | 0.97  | 0.95  | 0.90  | 0.28  | 0.02  | -0.03 | -0.07 | -0.06 |  | 40.8                                       | 37.9  | 31.9  | 26.0  | 5.3   | 0.3   | -0.5  | -1.0  | -0.8  |  |
| MR6       | 0.80                                 | 0.70  | 0.37  | 0.13  | -1.47 | -1.65 | -1.92 | -1.91 | -2.14 |  | 37.5                                       | 27.4  | 12.2  | 3.5   | -25.9 | -26.1 | -28.2 | -27.5 | -29.4 |  |
| LBR1      | 0.32                                 | 0.45  | 0.41  | 0.46  | 0.50  | 0.53  | 0.65  | 0.62  | 0.60  |  | 7.4                                        | 9.9   | 9.0   | 9.5   | 9.9   | 10.1  | 12.3  | 11.5  | 10.8  |  |
| LBR2      | 0.62                                 | 0.61  | 0.55  | 0.57  | 0.59  | 0.61  | 0.61  | 0.64  | 0.65  |  | 16.6                                       | 16.0  | 13.9  | 13.9  | 13.5  | 13.3  | 12.9  | 13.4  | 13.4  |  |
| LBR3      | -0.19                                | -0.13 | -0.08 | -0.04 | 0.01  | 0.07  | 0.12  | 0.08  | 0.10  |  | -5.5                                       | -3.5  | -2.3  | -1.1  | 0.1   | 1.6   | 2.9   | 1.9   | 2.2   |  |
| BR1       | -1.01                                | -0.40 | -0.10 | 0.12  | 0.25  | 0.29  | 0.24  | 0.20  | 0.24  |  | -28.7                                      | -11.2 | -2.6  | 3.1   | 6.1   | 6.9   | 5.3   | 4.5   | 5.2   |  |
| BR2       | -1.48                                | -1.32 | -1.25 | -1.00 | -0.63 | -0.33 | -0.15 | -0.17 | -0.07 |  | -44.9                                      | -39.0 | -36.1 | -27.7 | -16.5 | -8.1  | -3.6  | -4.0  | -1.7  |  |
| BR3       | -1.28                                | -1.23 | -1.18 | -1.09 | -1.08 | -1.01 | -1.00 | -0.95 | -0.90 |  | -37.0                                      | -35.0 | -33.1 | -30.1 | -28.9 | -26.2 | -25.2 | -23.8 | -22.5 |  |
| SCh1      | -0.12                                | -0.05 | -0.02 | 0.01  | 0.02  | -0.02 | -0.02 | -0.04 | -0.04 |  | -3.3                                       | -1.5  | -0.5  | 0.3   | 0.4   | -0.5  | -0.6  | -1.0  | -0.9  |  |
| SCh2      | -0.02                                | -0.04 | -0.02 | -0.03 | -0.04 | -0.03 | -0.05 | -0.03 | -0.05 |  | -0.5                                       | -0.9  | -0.5  | -0.6  | -0.8  | -0.6  | -1.2  | -0.7  | -1.1  |  |
| SR        | 0.00                                 | 0.00  | 0.00  | -0.01 | 0.00  | 0.00  | 0.00  | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR      | 0.05                                 | -0.01 | -0.04 | -0.08 | -0.12 | -0.19 | -0.24 | -0.28 | -0.26 |  | 1.1                                        | -0.1  | -0.8  | -1.5  | -2.1  | -3.2  | -3.8  | -4.6  | -4.0  |  |

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# **46 ft Channel Depth**

*Mitigation Plan 6a*

*D.O. Mitigation*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
**Scenario: 6A4ft-withDOmitigation**

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |       |       |       |
|------|------------------------|------|------|------|------|------|-------|-------|-------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%   | 95%   | 99%   |
| FR1  | 3.98                   | 4.04 | 4.07 | 4.3  | 4.43 | 4.6  | 4.74  | 4.78  | 4.89  |
| FR2  | 3.86                   | 3.95 | 4.03 | 4.29 | 4.47 | 4.64 | 4.91  | 4.98  | 5.03  |
| FR3  | 3.74                   | 3.79 | 3.84 | 4.14 | 4.31 | 4.57 | 5.07  | 5.67  | 6.02  |
| FR4  | 3.74                   | 3.8  | 3.88 | 4.15 | 4.32 | 4.57 | 5.08  | 5.6   | 6.12  |
| FR5  | 3.88                   | 3.97 | 4.08 | 4.33 | 4.48 | 4.81 | 5.44  | 5.68  | 5.97  |
| FR6  | 3.91                   | 4.01 | 4.1  | 4.35 | 4.51 | 4.79 | 5.51  | 5.86  | 6.07  |
| FR7  | 4.27                   | 4.41 | 4.49 | 4.72 | 4.98 | 5.7  | 6.57  | 6.9   | 7.01  |
| FR8  | 4.77                   | 4.87 | 5.06 | 5.4  | 6.6  | 7.56 | 8.19  | 8.53  | 8.88  |
| FR9  | 4.98                   | 5.09 | 5.34 | 5.72 | 6.79 | 7.83 | 10.11 | 10.81 | 11.55 |
| FR10 | 4.69                   | 5.04 | 5.22 | 5.56 | 5.9  | 6.31 | 6.6   | 6.86  | 7.15  |
| FR11 | 4.18                   | 4.58 | 4.81 | 5.11 | 5.66 | 6.14 | 6.4   | 6.66  | 6.93  |
| MR1  | 4.53                   | 4.71 | 4.84 | 5.08 | 5.37 | 5.68 | 6.14  | 6.28  | 6.47  |
| MR2  | 4.45                   | 4.58 | 4.7  | 5    | 5.33 | 5.64 | 6.02  | 6.27  | 6.38  |
| MR3  | 4.3                    | 4.45 | 4.58 | 4.76 | 5.05 | 5.37 | 5.65  | 5.83  | 6.05  |
| MR4  | 4.47                   | 4.61 | 4.68 | 4.87 | 5.15 | 5.38 | 5.59  | 5.7   | 5.98  |
| MR5  | 2.2                    | 2.78 | 3.12 | 3.86 | 5.35 | 6.2  | 6.53  | 6.78  | 7.04  |
| MR6  | 6.14                   | 6.32 | 6.46 | 6.64 | 6.9  | 7.23 | 7.41  | 7.51  | 7.61  |
| LBR1 | 4.03                   | 4.82 | 5.13 | 5.49 | 5.8  | 6.1  | 6.32  | 6.55  | 6.68  |
| LBR2 | 3.69                   | 4.56 | 4.68 | 4.93 | 5.14 | 5.38 | 5.55  | 5.68  | 5.8   |
| LBR3 | 2.61                   | 2.69 | 2.83 | 3.06 | 3.32 | 3.64 | 3.82  | 3.89  | 4.04  |
| BR1  | 3.88                   | 4.52 | 4.78 | 4.96 | 5.12 | 5.33 | 5.5   | 5.66  | 5.78  |
| BR2  | 2.57                   | 2.78 | 3    | 3.4  | 4.58 | 5.22 | 5.42  | 5.57  | 5.73  |
| BR3  | 2.36                   | 2.46 | 2.53 | 2.64 | 2.85 | 3.08 | 3.47  | 3.74  | 4.06  |
| SCH1 | 2.44                   | 2.6  | 2.83 | 3.03 | 3.18 | 3.41 | 3.7   | 3.89  | 4.07  |
| SCH2 | 3.88                   | 4.02 | 4.14 | 4.28 | 4.46 | 4.6  | 4.72  | 4.81  | 4.93  |
| SR   | 4.68                   | 4.74 | 4.96 | 5.3  | 5.61 | 5.96 | 6.1   | 6.15  | 6.22  |
| StbR | 4.14                   | 4.81 | 5.14 | 5.84 | 6.53 | 7.14 | 7.6   | 7.89  | 8.31  |

**Delta D.O. Percentiles for Critical Cells**  
 Baseline: WASP1997Existing  
 Project: Scenario: 644ft-withDmitigation

| Zone  | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|       | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |
|       | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1   | 0.06                  | 1.5   | 0.05  | 1.3   | 0.02  | 0.5   | 0.08  | 1.9   | 0.05  | 1.1   | 0.08  | 1.8   | 0.11  | 2.4   | 0.08  | 1.7   | 0.15  | 3.2   |
| FR2   | 0.2                   | 5.5   | 0.19  | 5.1   | 0.19  | 4.9   | 0.26  | 6.5   | 0.25  | 5.9   | 0.24  | 5.5   | 0.29  | 6.3   | 0.29  | 6.2   | -0.05 | -1.0  |
| FR3   | 0.25                  | 7.2   | 0.2   | 5.6   | 0.2   | 5.5   | 0.27  | 7.0   | 0.26  | 6.4   | 0.28  | 6.5   | 0.29  | 6.1   | 0.6   | 11.8  | 0.42  | 7.5   |
| FR4   | 0.24                  | 6.9   | 0.24  | 6.7   | 0.26  | 7.2   | 0.23  | 5.9   | 0.25  | 6.1   | 0.17  | 3.9   | 0.12  | 2.4   | 0.29  | 5.5   | 0.62  | 11.3  |
| FR6   | 0.26                  | 7.2   | 0.23  | 6.1   | 0.19  | 4.9   | 0.25  | 6.1   | 0.17  | 3.9   | -0.08 | -1.6  | 0.02  | 0.4   | 0.05  | 0.9   | 0.19  | 3.3   |
| FR6   | 0.22                  | 6.0   | 0.25  | 6.6   | 0.21  | 5.4   | 0.23  | 5.6   | 0.25  | 5.9   | 0.01  | 0.2   | -0.06 | -1.1  | 0.09  | 1.6   | 0.16  | 2.7   |
| FR7   | 0.1                   | 2.4   | 0.16  | 3.8   | 0.16  | 3.7   | 0.11  | 2.4   | -0.05 | -1.0  | -0.28 | -4.7  | 0.31  | 5.0   | 0.54  | 8.5   | 0.52  | 8.0   |
| FR8   | 0.11                  | 2.4   | 0.09  | 1.9   | 0     | 0.0   | -0.11 | -2.0  | 0.48  | 7.8   | 1.12  | 17.4  | 1.47  | 21.9  | 1.68  | 24.5  | 1.77  | 24.9  |
| FR9   | 0.1                   | 2.0   | 0.06  | 1.2   | 0.01  | 0.2   | 0     | 0.0   | 0.51  | 8.1   | 1.23  | 18.6  | 3.26  | 47.6  | 3.79  | 54.0  | 4.36  | 60.6  |
| FR10  | 0.38                  | 8.8   | 0.26  | 5.4   | 0.27  | 5.5   | 0.24  | 4.5   | -0.01 | -0.2  | -0.12 | -1.9  | -0.08 | -1.2  | -0.15 | -2.1  | -0.07 | -1.0  |
| FR11  | 0.01                  | 0.2   | -0.12 | -2.6  | -0.12 | -2.4  | -0.13 | -2.5  | -0.01 | -0.2  | 0     | 0.0   | -0.1  | -1.5  | 0.02  | 0.3   | -0.2  | -2.8  |
| MR1   | 0.12                  | 2.7   | 0.18  | 4.0   | 0.22  | 4.8   | 0.19  | 3.9   | 0.21  | 4.1   | 0.09  | 1.6   | 0.25  | 4.2   | 0.28  | 4.7   | 0.25  | 4.0   |
| MR2   | 0.42                  | 10.4  | 0.43  | 10.4  | 0.37  | 8.5   | 0.38  | 8.2   | 0.26  | 5.1   | 0.11  | 2.0   | 0.22  | 3.8   | 0.37  | 6.3   | 0.35  | 5.8   |
| MR3   | 0.6                   | 16.2  | 0.56  | 14.4  | 0.58  | 14.5  | 0.57  | 13.6  | 0.53  | 11.7  | 0.3   | 5.9   | -0.06 | -1.1  | -0.1  | -1.7  | -0.14 | -2.3  |
| MR4   | 0.58                  | 14.9  | 0.58  | 14.4  | 0.56  | 13.6  | 0.48  | 10.9  | 0.54  | 11.7  | 0.49  | 10.0  | 0.53  | 10.5  | 0.52  | 10.0  | 0.57  | 10.5  |
| MR5   | 0.71                  | 47.7  | 0.74  | 36.3  | 0.71  | 28.5  | 0.81  | 26.6  | 0.38  | 7.6   | -0.03 | -0.5  | -0.04 | -0.6  | -0.11 | -1.6  | -0.07 | -1.0  |
| MR6   | 4.03                  | 191.0 | 3.83  | 153.8 | 3.45  | 114.6 | 3.13  | 89.2  | 1.29  | 23.0  | 0.87  | 13.7  | 0.51  | 9.0   | 0.45  | 6.4   | 0.29  | 4.0   |
| LBRT1 | 0.46                  | 12.9  | 0.47  | 10.8  | 0.38  | 8.0   | 0.36  | 7.0   | 0.37  | 6.8   | 0.46  | 8.2   | 0.35  | 5.9   | 0.39  | 6.3   | 0.21  | 3.2   |
| LBRT2 | 0                     | 0.0   | 0.7   | 18.1  | 0.71  | 17.9  | 0.77  | 18.5  | 0.75  | 17.1  | 0.78  | 17.0  | 0.78  | 16.4  | 0.8   | 16.4  | 0.54  | 10.3  |
| LBRT3 | -0.28                 | -9.7  | -0.59 | -18.0 | -0.64 | -18.4 | -0.82 | -16.8 | -0.63 | -15.9 | -0.7  | -16.1 | -0.91 | -19.2 | -1.1  | -22.0 | -1.2  | -22.9 |
| BR1   | 0.6                   | 18.3  | 1.1   | 32.6  | 1.21  | 33.9  | 1.22  | 32.6  | 1.15  | 29.0  | 1.13  | 26.9  | 1.07  | 24.2  | 1.13  | 24.9  | 1.14  | 24.6  |
| BR2   | 0.02                  | 0.8   | -0.06 | -2.1  | 0.01  | 0.3   | 0.16  | 4.9   | 1.14  | 33.1  | 1.52  | 41.1  | 1.58  | 41.1  | 1.64  | 41.7  | 1.7   | 42.2  |
| BR3   | -0.67                 | -22.1 | -0.8  | -24.5 | -0.91 | -26.5 | -0.98 | -27.1 | -0.93 | -24.6 | -0.87 | -22.0 | -0.81 | -15.0 | -0.41 | -8.9  | -0.19 | -4.5  |
| SCH1  | 0.05                  | 2.1   | 0.03  | 1.2   | 0.15  | 5.6   | 0.2   | 7.1   | 0.17  | 5.6   | 0     | 0.0   | -0.07 | -1.9  | 0     | 0.0   | -0.07 | -1.7  |
| SCH2  | 0.14                  | 3.7   | 0.11  | 2.8   | 0.13  | 3.2   | 0.14  | 3.4   | 0.13  | 3.0   | 0.13  | 2.9   | 0.12  | 2.6   | 0.13  | 2.8   | 0.11  | 2.3   |
| SR    | -0.01                 | -0.2  | 0     | 0.0   | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |
| SbR   | 0.3                   | 7.8   | 0.59  | 14.0  | 0.57  | 12.5  | 0.8   | 15.9  | 0.84  | 14.8  | 0.94  | 15.2  | 1.11  | 17.1  | 1.25  | 18.8  | 1.47  | 21.5  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31  
 Project:enario: 6A4ft-withDOmitigation

| Zone<br>Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|--------------|---------------------------------------|------|------|------|------|------|------|------|------|
|              | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1          | 4.16                                  | 4.23 | 4.29 | 4.42 | 4.53 | 4.62 | 4.69 | 4.75 | 4.80 |
| FR2          | 4.07                                  | 4.09 | 4.14 | 4.41 | 4.54 | 4.73 | 4.86 | 4.94 | 5.00 |
| FR3          | 3.91                                  | 3.98 | 4.03 | 4.29 | 4.44 | 4.62 | 4.98 | 5.02 | 5.12 |
| FR4          | 3.89                                  | 3.92 | 3.97 | 4.25 | 4.39 | 4.58 | 5.09 | 5.34 | 5.61 |
| FR5          | 3.93                                  | 4.02 | 4.12 | 4.34 | 4.50 | 4.80 | 5.41 | 5.76 | 5.97 |
| FR6          | 4.16                                  | 4.20 | 4.27 | 4.54 | 4.71 | 5.11 | 5.83 | 6.17 | 6.31 |
| FR7          | 4.57                                  | 4.70 | 4.87 | 5.12 | 5.88 | 6.52 | 6.97 | 7.08 | 7.17 |
| FR8          | 4.98                                  | 5.15 | 5.30 | 5.69 | 6.68 | 7.41 | 8.06 | 8.23 | 8.47 |
| FR9          | 6.34                                  | 6.68 | 6.81 | 7.07 | 7.36 | 7.67 | 7.93 | 8.13 | 8.29 |
| FR10         | 5.46                                  | 5.76 | 5.91 | 6.17 | 6.53 | 6.79 | 7.11 | 7.24 | 7.49 |
| FR11         | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.49 | 5.76 | 5.99 | 6.12 | 6.30 |
| MR1          | 4.63                                  | 4.77 | 4.89 | 5.11 | 5.37 | 5.67 | 6.02 | 6.25 | 6.37 |
| MR2          | 4.48                                  | 4.61 | 4.76 | 5.04 | 5.32 | 5.61 | 5.95 | 6.23 | 6.34 |
| MR3          | 4.42                                  | 4.52 | 4.65 | 4.85 | 5.12 | 5.39 | 5.56 | 5.71 | 5.89 |
| MR4          | 4.80                                  | 4.93 | 5.05 | 5.25 | 5.53 | 5.76 | 5.96 | 6.14 | 6.30 |
| MR5          | 3.26                                  | 3.52 | 3.91 | 4.36 | 5.62 | 6.18 | 6.49 | 6.75 | 6.95 |
| MR6          | 2.95                                  | 3.23 | 3.43 | 3.71 | 4.22 | 4.67 | 4.89 | 5.04 | 5.14 |
| LBR1         | 4.61                                  | 4.94 | 5.00 | 5.26 | 5.49 | 5.72 | 5.95 | 6.07 | 6.17 |
| LBR2         | 4.31                                  | 4.41 | 4.51 | 4.71 | 4.94 | 5.16 | 5.32 | 5.41 | 5.55 |
| LBR3         | 3.34                                  | 3.45 | 3.57 | 3.74 | 3.95 | 4.17 | 4.36 | 4.43 | 4.56 |
| BR1          | 4.52                                  | 4.73 | 4.86 | 5.08 | 5.38 | 5.73 | 5.87 | 6.00 | 6.08 |
| BR2          | 3.08                                  | 3.61 | 3.91 | 4.44 | 5.14 | 5.43 | 5.66 | 5.78 | 5.83 |
| BR3          | 2.78                                  | 2.85 | 2.92 | 3.03 | 3.24 | 3.54 | 3.80 | 3.95 | 4.11 |
| SCh1         | 3.51                                  | 3.62 | 3.72 | 3.86 | 3.97 | 4.05 | 4.12 | 4.15 | 4.21 |
| SCh2         | 4.09                                  | 4.16 | 4.22 | 4.40 | 4.53 | 4.64 | 4.72 | 4.77 | 4.84 |
| SR           | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR         | 5.12                                  | 5.40 | 5.60 | 5.94 | 6.41 | 6.77 | 7.04 | 7.17 | 7.31 |



# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline nario: WASP1997Existing

Project ario: 6A4ft-withDOmitigation

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1       | 0.03                                 | 0.03  | 0.03  | 0.04  | 0.04  | 0.02  | -0.03 | -0.05 | -0.04 |  | 0.7                                        | 0.7   | 0.7   | 1.0   | 0.8   | 0.5   | -0.6  | -1.0  | -0.9  |  |
| FR2       | 0.13                                 | 0.10  | 0.10  | 0.16  | 0.17  | 0.19  | 0.21  | 0.25  | 0.24  |  | 3.2                                        | 2.6   | 2.6   | 3.6   | 3.9   | 4.3   | 4.6   | 5.3   | 5.0   |  |
| FR3       | 0.21                                 | 0.21  | 0.20  | 0.26  | 0.25  | 0.24  | 0.27  | 0.24  | 0.13  |  | 5.8                                        | 5.5   | 5.2   | 6.5   | 6.0   | 5.4   | 5.7   | 5.0   | 2.5   |  |
| FR4       | 0.23                                 | 0.21  | 0.22  | 0.26  | 0.27  | 0.20  | 0.15  | 0.03  | 0.07  |  | 6.4                                        | 5.7   | 5.8   | 6.5   | 6.5   | 4.7   | 3.1   | 0.6   | 1.3   |  |
| FR5       | 0.26                                 | 0.26  | 0.24  | 0.27  | 0.23  | 0.04  | 0.00  | 0.11  | 0.17  |  | 7.0                                        | 6.8   | 6.1   | 6.5   | 5.4   | 0.8   | 0.0   | 2.0   | 3.0   |  |
| FR6       | 0.20                                 | 0.19  | 0.16  | 0.22  | 0.16  | -0.09 | 0.05  | 0.24  | 0.26  |  | 5.0                                        | 4.8   | 3.9   | 5.0   | 3.5   | -1.7  | 0.9   | 4.1   | 4.4   |  |
| FR7       | 0.13                                 | 0.15  | 0.18  | 0.03  | 0.02  | 0.34  | 0.55  | 0.52  | 0.47  |  | 3.0                                        | 3.3   | 3.7   | 0.6   | 0.4   | 5.5   | 8.6   | 7.9   | 7.0   |  |
| FR8       | 0.12                                 | 0.10  | 0.02  | 0.03  | 0.53  | 0.98  | 1.38  | 1.42  | 1.49  |  | 2.6                                        | 2.0   | 0.3   | 0.5   | 8.5   | 15.2  | 20.7  | 20.9  | 21.4  |  |
| FR9       | 0.67                                 | 0.77  | 0.80  | 0.81  | 0.83  | 0.86  | 0.86  | 0.91  | 0.95  |  | 11.9                                       | 13.1  | 13.2  | 12.9  | 12.6  | 12.6  | 12.2  | 12.6  | 13.0  |  |
| FR10      | -0.25                                | -0.09 | -0.11 | -0.13 | -0.04 | -0.02 | -0.05 | 0.00  | 0.16  |  | 4.4                                        | -1.5  | -1.8  | -2.0  | -0.6  | -0.2  | -0.7  | 0.1   | 2.2   |  |
| FR11      | -0.33                                | -0.35 | -0.36 | -0.41 | -0.39 | -0.42 | -0.46 | -0.43 | -0.38 |  | 6.8                                        | -6.9  | -6.9  | -7.3  | -6.6  | -6.7  | -7.1  | -6.6  | -5.7  |  |
| MR1       | 0.15                                 | 0.18  | 0.19  | 0.22  | 0.20  | 0.14  | 0.18  | 0.28  | 0.33  |  | 3.3                                        | 4.0   | 4.2   | 4.5   | 3.8   | 2.4   | 3.1   | 4.7   | 5.4   |  |
| MR2       | 0.28                                 | 0.30  | 0.25  | 0.26  | 0.19  | 0.11  | 0.15  | 0.32  | 0.31  |  | 6.7                                        | 6.9   | 5.5   | 5.3   | 3.8   | 2.0   | 2.5   | 5.5   | 5.2   |  |
| MR3       | 0.57                                 | 0.49  | 0.55  | 0.47  | 0.38  | 0.17  | -0.02 | -0.01 | 0.04  |  | 14.7                                       | 12.1  | 13.4  | 10.7  | 8.0   | 3.2   | -0.4  | -0.2  | 0.6   |  |
| MR4       | 0.41                                 | 0.42  | 0.44  | 0.46  | 0.48  | 0.52  | 0.52  | 0.60  | 0.61  |  | 9.4                                        | 9.4   | 9.4   | 9.7   | 9.4   | 9.9   | 9.6   | 10.9  | 10.6  |  |
| MR5       | 0.94                                 | 0.97  | 0.95  | 0.90  | 0.28  | 0.02  | -0.03 | -0.07 | -0.06 |  | 40.8                                       | 37.9  | 31.9  | 26.0  | 5.3   | 0.3   | -0.5  | -1.0  | -0.8  |  |
| MR6       | 0.80                                 | 0.70  | 0.37  | 0.13  | -1.47 | -1.65 | -1.92 | -1.91 | -2.14 |  | 37.5                                       | 27.4  | 12.2  | 3.5   | -25.9 | -26.1 | -28.2 | -27.5 | -28.4 |  |
| LBR1      | 0.32                                 | 0.45  | 0.41  | 0.46  | 0.50  | 0.53  | 0.65  | 0.62  | 0.60  |  | 7.4                                        | 9.9   | 9.0   | 9.6   | 9.9   | 10.1  | 12.3  | 11.5  | 10.8  |  |
| LBR2      | 0.62                                 | 0.61  | 0.55  | 0.57  | 0.59  | 0.61  | 0.61  | 0.64  | 0.65  |  | 16.6                                       | 16.0  | 13.9  | 13.9  | 13.6  | 13.3  | 12.9  | 13.4  | 13.4  |  |
| LBR3      | -0.20                                | -0.13 | -0.09 | -0.04 | 0.01  | 0.07  | 0.12  | 0.08  | 0.10  |  | -5.5                                       | -3.5  | -2.4  | -1.1  | 0.1   | 1.6   | 2.9   | 1.9   | 2.3   |  |
| BR1       | 0.99                                 | 1.15  | 1.22  | 1.18  | 1.35  | 1.52  | 1.44  | 1.50  | 1.48  |  | 28.2                                       | 32.1  | 33.5  | 30.3  | 33.3  | 36.0  | 32.6  | 33.4  | 32.2  |  |
| BR2       | -0.21                                | 0.23  | 0.45  | 0.82  | 1.33  | 1.44  | 1.52  | 1.49  | 1.45  |  | -6.5                                       | 6.7   | 13.0  | 22.6  | 34.8  | 36.1  | 36.7  | 34.6  | 33.0  |  |
| BR3       | -0.68                                | -0.65 | -0.64 | -0.59 | -0.50 | -0.31 | -0.17 | -0.04 | 0.09  |  | -19.7                                      | -18.6 | -17.9 | -16.3 | -13.3 | -8.0  | -4.3  | -1.1  | 2.3   |  |
| SCh1      | 0.01                                 | 0.06  | 0.09  | 0.14  | 0.15  | 0.10  | 0.08  | 0.05  | 0.05  |  | 0.2                                        | 1.6   | 2.6   | 3.7   | 3.8   | 2.5   | 2.0   | 1.3   | 1.2   |  |
| SCh2      | 0.15                                 | 0.12  | 0.12  | 0.15  | 0.15  | 0.14  | 0.12  | 0.12  | 0.11  |  | 3.7                                        | 3.0   | 3.0   | 3.4   | 3.5   | 3.2   | 2.5   | 2.6   | 2.4   |  |
| SR        | 0.00                                 | 0.00  | 0.00  | -0.01 | 0.00  | 0.00  | 0.00  | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR      | 0.38                                 | 0.47  | 0.51  | 0.50  | 0.62  | 0.68  | 0.74  | 0.74  | 0.75  |  | 8.0                                        | 9.5   | 10.1  | 9.3   | 10.7  | 11.1  | 11.7  | 11.5  | 11.5  |  |

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## **45 ft Channel Depth**

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
Scenario: WASP-1997-3ftonly

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.95                   | 3.99 | 4.03 | 4.19 | 4.35 | 4.48 | 4.59 | 4.66 | 4.73 |
| FR2  | 3.65                   | 3.75 | 3.84 | 4.01 | 4.15 | 4.35 | 4.51 | 4.56 | 4.62 |
| FR3  | 3.51                   | 3.57 | 3.61 | 3.84 | 3.98 | 4.18 | 4.6  | 4.9  | 5.43 |
| FR4  | 3.51                   | 3.57 | 3.62 | 3.84 | 4    | 4.21 | 4.63 | 4.98 | 5.53 |
| FR5  | 3.68                   | 3.74 | 3.83 | 3.99 | 4.15 | 4.44 | 4.97 | 5.3  | 5.5  |
| FR6  | 3.7                    | 3.78 | 3.87 | 4.02 | 4.15 | 4.4  | 5.1  | 5.39 | 5.59 |
| FR7  | 4.46                   | 4.6  | 4.71 | 4.99 | 5.61 | 6.07 | 6.39 | 6.58 | 6.83 |
| FR8  | 4.47                   | 4.58 | 4.73 | 5.09 | 5.91 | 6.31 | 6.6  | 6.74 | 6.98 |
| FR9  | 5.36                   | 5.8  | 5.92 | 6.2  | 6.45 | 6.72 | 6.98 | 7.21 | 7.62 |
| FR10 | 4.34                   | 4.8  | 4.97 | 5.32 | 5.91 | 6.43 | 6.69 | 7.02 | 7.22 |
| FR11 | 4.22                   | 4.66 | 4.94 | 5.24 | 5.66 | 6.14 | 6.51 | 6.65 | 7.16 |
| MR1  | 4.32                   | 4.38 | 4.49 | 4.7  | 4.99 | 5.34 | 5.6  | 5.78 | 6.08 |
| MR2  | 4.03                   | 4.11 | 4.3  | 4.57 | 4.95 | 5.36 | 5.62 | 5.76 | 5.91 |
| MR3  | 3.74                   | 3.89 | 3.99 | 4.16 | 4.47 | 4.97 | 5.64 | 5.86 | 6.23 |
| MR4  | 4.02                   | 4.18 | 4.31 | 4.47 | 4.73 | 5    | 5.14 | 5.27 | 5.48 |
| MR5  | 1.5                    | 2.05 | 2.45 | 3.08 | 4.89 | 6.23 | 6.57 | 6.91 | 7.11 |
| MR6  | 2.11                   | 2.53 | 3.03 | 3.55 | 5.61 | 6.37 | 6.81 | 7.06 | 7.33 |
| LBR1 | 3.61                   | 4.36 | 4.78 | 5.19 | 5.44 | 5.68 | 5.99 | 6.16 | 6.49 |
| LBR2 | 3.53                   | 3.86 | 3.97 | 4.16 | 4.4  | 4.64 | 4.81 | 5.01 | 5.59 |
| LBR3 | 3.05                   | 3.36 | 3.53 | 3.79 | 4.1  | 4.49 | 4.82 | 5.03 | 5.31 |
| BR1  | 3.28                   | 3.4  | 3.56 | 3.73 | 3.95 | 4.17 | 4.39 | 4.47 | 4.62 |
| BR2  | 2.6                    | 2.82 | 3.01 | 3.24 | 3.43 | 3.69 | 3.86 | 3.94 | 4.03 |
| BR3  | 3.02                   | 3.21 | 3.34 | 3.53 | 3.7  | 3.9  | 4.04 | 4.1  | 4.24 |
| SCH1 | 2.38                   | 2.59 | 2.68 | 2.88 | 3.27 | 4.03 | 4.35 | 4.47 | 4.74 |
| SCH2 | 3.76                   | 3.88 | 3.97 | 4.1  | 4.27 | 4.41 | 4.56 | 4.63 | 4.77 |
| SR   | 4.69                   | 4.74 | 4.97 | 5.31 | 5.62 | 5.97 | 6.11 | 6.16 | 6.23 |
| StbR | 3.59                   | 4.05 | 4.51 | 5.03 | 5.69 | 6.12 | 6.43 | 6.61 | 6.78 |

Delta D.O. Percentiles for Critical Cells  
Baseline: WASP1997Existing  
Project: WASP-1997-3ftonly

| Zone: | Delta D.O. Percentile |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |
|-------|-----------------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|       | 1%                    |      | 5%    |      | 10%   |      | 25%   |      | 50%   |      | 75%   |      | 90%   |      | 95%   |      | 99    |      |
|       | mg/l                  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    |
| FR1   | 0.03                  | 0.8  | 0     | 0.0  | -0.02 | -0.5 | -0.03 | -0.7 | -0.03 | -0.7 | -0.04 | -0.9 | -0.04 | -0.9 | -0.04 | -0.9 | -0.01 | -0.2 |
| FR2   | -0.01                 | -0.3 | -0.01 | -0.3 | 0     | 0.0  | -0.02 | -0.5 | -0.07 | -1.7 | -0.05 | -1.1 | -0.11 | -2.4 | -0.13 | -2.8 | -0.46 | -9.1 |
| FR3   | 0.02                  | 0.6  | -0.02 | -0.6 | -0.03 | -0.8 | -0.03 | -0.8 | -0.07 | -1.7 | -0.11 | -2.6 | -0.18 | -3.8 | -0.17 | -3.4 | -0.17 | -3.0 |
| FR4   | 0.01                  | 0.3  | 0.01  | 0.3  | 0     | 0.0  | -0.08 | -2.0 | -0.07 | -1.7 | -0.19 | -4.3 | -0.33 | -6.7 | -0.33 | -6.2 | 0.03  | 0.5  |
| FR5   | 0.06                  | 1.7  | 0     | 0.0  | -0.06 | -1.5 | -0.09 | -2.2 | -0.16 | -3.7 | -0.45 | -9.3 | -0.45 | -8.3 | -0.33 | -5.9 | -0.28 | -4.8 |
| FR6   | 0.01                  | 0.3  | 0.02  | 0.5  | -0.02 | -0.5 | -0.1  | -2.4 | -0.11 | -2.6 | -0.38 | -7.9 | -0.47 | -8.4 | -0.38 | -6.6 | -0.32 | -5.4 |
| FR7   | 0.29                  | 7.0  | 0.35  | 8.2  | 0.38  | 8.8  | 0.38  | 8.2  | 0.58  | 11.5 | 0.09  | 1.5  | 0.13  | 2.1  | 0.22  | 3.5  | 0.34  | 5.2  |
| FR8   | -0.19                 | -4.1 | -0.2  | -4.2 | -0.33 | -6.5 | -0.42 | -7.6 | -0.21 | -3.4 | -0.13 | -2.0 | -0.12 | -1.8 | -0.11 | -1.6 | -0.13 | -1.8 |
| FR9   | 0.48                  | 9.8  | 0.77  | 15.3 | 0.59  | 11.1 | 0.48  | 8.4  | 0.17  | 2.7  | 0.12  | 1.8  | 0.13  | 1.9  | 0.19  | 2.7  | 0.43  | 6.0  |
| FR10  | 0.03                  | 0.7  | 0.02  | 0.4  | 0.02  | 0.4  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0.01  | 0.1  | 0.01  | 0.1  | 0     | 0.0  |
| FR11  | 0.05                  | 1.2  | -0.04 | -0.9 | 0.01  | 0.2  | 0     | 0.0  | -0.01 | -0.2 | 0     | 0.0  | 0.01  | 0.2  | 0.01  | 0.2  | 0.03  | 0.4  |
| MR1   | -0.09                 | -2.0 | -0.15 | -3.3 | -0.13 | -2.8 | -0.19 | -3.9 | -0.17 | -3.3 | -0.25 | -4.5 | -0.29 | -4.9 | -0.22 | -3.7 | -0.14 | -2.3 |
| MR2   | 0                     | 0.0  | -0.04 | -1.0 | -0.03 | -0.7 | -0.05 | -1.1 | -0.12 | -2.4 | -0.17 | -3.1 | -0.18 | -3.1 | -0.14 | -2.4 | -0.12 | -2.0 |
| MR3   | 0.04                  | 1.1  | 0     | 0.0  | -0.01 | -0.2 | -0.03 | -0.7 | -0.03 | -1.1 | -0.1  | -2.0 | -0.07 | -1.2 | -0.07 | -1.2 | 0.04  | 0.6  |
| MR4   | 0.13                  | 3.3  | 0.15  | 3.7  | 0.19  | 4.6  | 0.08  | 1.8  | 0.12  | 2.6  | 0.11  | 2.2  | 0.08  | 1.6  | 0.09  | 1.7  | 0.07  | 1.3  |
| MR5   | 0.01                  | 0.7  | 0.01  | 0.5  | 0.04  | 1.7  | 0.03  | 1.0  | -0.08 | -1.6 | 0     | 0.0  | 0     | 0.0  | 0.02  | 0.3  | 0     | 0.0  |
| MR6   | 0                     | 0.0  | 0.04  | 1.6  | 0.02  | 0.7  | 0.04  | 1.1  | 0     | 0.0  | 0.01  | 0.2  | 0.01  | 0.1  | 0     | 0.0  | 0.01  | 0.1  |
| LBR1  | 0.04                  | 1.1  | 0.01  | 0.2  | 0.03  | 0.6  | 0.06  | 1.2  | 0.01  | 0.2  | 0.04  | 0.7  | 0.02  | 0.3  | 0     | 0.0  | 0.02  | 0.3  |
| LBR2  | -0.16                 | -4.3 | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0.01  | 0.2  | 0.04  | 0.9  | 0.04  | 0.8  | 0.13  | 2.7  | 0.33  | 6.3  |
| LBR3  | 0.16                  | 5.5  | 0.08  | 2.4  | 0.08  | 1.7  | 0.11  | 3.0  | 0.15  | 3.8  | 0.15  | 3.5  | 0.09  | 1.9  | 0.04  | 0.8  | 0.07  | 1.3  |
| BR1   | 0                     | 0.0  | -0.02 | -0.7 | -0.01 | -0.3 | -0.01 | -0.3 | -0.02 | -0.5 | -0.03 | -0.7 | -0.04 | -0.9 | -0.06 | -1.3 | -0.02 | -0.4 |
| BR2   | 0.05                  | 2.0  | -0.02 | -0.7 | 0.02  | 0.7  | 0     | 0.0  | -0.01 | -0.3 | -0.01 | -0.3 | 0.02  | 0.5  | 0.01  | 0.3  | 0     | 0.0  |
| BR3   | -0.01                 | -0.3 | -0.05 | -1.5 | -0.1  | -2.9 | -0.09 | -2.5 | -0.08 | -2.1 | -0.05 | -1.3 | -0.04 | -1.0 | -0.05 | -1.2 | -0.01 | -0.2 |
| SCH1  | -0.01                 | -0.4 | 0.02  | 0.8  | 0     | 0.0  | 0.05  | 1.8  | 0.26  | 8.6  | 0.62  | 16.2 | 0.58  | 15.4 | 0.58  | 14.9 | 0.6   | 14.5 |
| SCH2  | 0.02                  | 0.5  | -0.03 | -0.8 | -0.04 | -1.0 | -0.04 | -1.0 | -0.06 | -1.4 | -0.06 | -1.3 | -0.04 | -0.9 | -0.05 | -1.1 | -0.05 | -1.0 |
| SR    | 0                     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  |
| StbR  | -0.25                 | -6.5 | -0.17 | -4.0 | -0.06 | -1.3 | -0.01 | -0.2 | 0     | 0.0  | -0.08 | -1.3 | -0.06 | -0.9 | -0.03 | -0.5 | -0.06 | -0.9 |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Project Scenario: WASP-1997-3ftonly

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.16                                  | 4.21 | 4.26 | 4.37 | 4.49 | 4.57 | 4.69 | 4.76 | 4.81 |
| FR2       | 3.96                                  | 3.99 | 4.05 | 4.23 | 4.34 | 4.49 | 4.60 | 4.64 | 4.69 |
| FR3       | 3.72                                  | 3.78 | 3.83 | 4.01 | 4.15 | 4.31 | 4.54 | 4.61 | 4.68 |
| FR4       | 3.67                                  | 3.71 | 3.75 | 3.93 | 4.06 | 4.20 | 4.62 | 4.92 | 5.12 |
| FR5       | 3.70                                  | 3.76 | 3.85 | 4.02 | 4.15 | 4.42 | 4.98 | 5.30 | 5.49 |
| FR6       | 3.93                                  | 3.97 | 4.03 | 4.21 | 4.35 | 4.75 | 5.41 | 5.64 | 5.80 |
| FR7       | 4.33                                  | 4.41 | 4.52 | 4.77 | 5.50 | 6.02 | 6.26 | 6.40 | 6.53 |
| FR8       | 4.66                                  | 4.83 | 4.97 | 5.33 | 5.96 | 6.32 | 6.56 | 6.70 | 6.81 |
| FR9       | 5.36                                  | 5.66 | 5.84 | 6.10 | 6.45 | 6.74 | 6.99 | 7.19 | 7.29 |
| FR10      | 5.70                                  | 5.85 | 6.02 | 6.30 | 6.56 | 6.81 | 7.17 | 7.22 | 7.32 |
| FR11      | 4.88                                  | 5.10 | 5.27 | 5.59 | 5.89 | 6.18 | 6.45 | 6.56 | 6.68 |
| MR1       | 4.34                                  | 4.45 | 4.56 | 4.76 | 5.00 | 5.33 | 5.58 | 5.67 | 5.84 |
| MR2       | 4.17                                  | 4.28 | 4.47 | 4.67 | 4.98 | 5.30 | 5.59 | 5.69 | 5.80 |
| MR3       | 3.87                                  | 4.02 | 4.10 | 4.36 | 4.68 | 5.11 | 5.48 | 5.59 | 5.73 |
| MR4       | 4.42                                  | 4.52 | 4.62 | 4.79 | 5.06 | 5.24 | 5.44 | 5.58 | 5.72 |
| MR5       | 2.30                                  | 2.56 | 2.99 | 3.50 | 5.27 | 6.16 | 6.53 | 6.81 | 7.03 |
| MR6       | 2.14                                  | 2.59 | 3.09 | 3.60 | 5.70 | 6.32 | 6.80 | 6.94 | 7.28 |
| LBR1      | 4.30                                  | 4.51 | 4.60 | 4.83 | 5.01 | 5.21 | 5.32 | 5.47 | 5.58 |
| LBR2      | 3.69                                  | 3.80 | 3.96 | 4.14 | 4.36 | 4.56 | 4.74 | 4.80 | 4.90 |
| LBR3      | 3.59                                  | 3.67 | 3.72 | 3.84 | 4.00 | 4.16 | 4.32 | 4.40 | 4.50 |
| BR1       | 3.52                                  | 3.58 | 3.64 | 3.88 | 4.01 | 4.18 | 4.38 | 4.45 | 4.54 |
| BR2       | 3.30                                  | 3.37 | 3.45 | 3.60 | 3.80 | 3.96 | 4.11 | 4.26 | 4.35 |
| BR3       | 3.43                                  | 3.49 | 3.53 | 3.61 | 3.73 | 3.88 | 3.96 | 4.00 | 4.03 |
| SCh1      | 3.48                                  | 3.55 | 3.61 | 3.71 | 3.82 | 3.94 | 4.04 | 4.10 | 4.21 |
| SCh2      | 3.95                                  | 4.04 | 4.09 | 4.22 | 4.34 | 4.45 | 4.54 | 4.60 | 4.69 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.84 | 6.17 | 6.35 | 6.41 | 6.48 |
| StbR      | 4.65                                  | 4.85 | 4.98 | 5.33 | 5.66 | 5.96 | 6.16 | 6.25 | 6.41 |

Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline:nario: WASP1997Existing

Project:nario: WASP-1997-3ftonly

| Zone<br>Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       | Project - Baseline Relative Difference (%) |      |      |      |      |      |      |      |      |
|--------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------------------------------------------|------|------|------|------|------|------|------|------|
|              | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   | 1%                                         | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1          | 0.03                                 | 0.01  | 0.00  | -0.01 | -0.01 | -0.02 | -0.03 | -0.04 | -0.03 | 0.6                                        | 0.3  | 0.0  | -0.2 | -0.2 | -0.5 | -0.6 | -0.8 | -0.7 |
| FR2          | 0.01                                 | 0.00  | 0.01  | -0.02 | -0.04 | -0.05 | -0.05 | -0.05 | -0.07 | 0.4                                        | 0.1  | 0.3  | -0.5 | -0.8 | -1.0 | -1.0 | -1.0 | -1.4 |
| FR3          | 0.03                                 | 0.01  | 0.00  | -0.02 | -0.04 | -0.07 | -0.18 | -0.18 | -0.32 | 0.7                                        | 0.4  | 0.1  | -0.5 | -1.0 | -1.6 | -3.8 | -3.7 | -6.3 |
| FR4          | 0.01                                 | 0.01  | 0.00  | -0.05 | -0.07 | -0.17 | -0.31 | -0.39 | -0.43 | 0.4                                        | 0.2  | 0.1  | -1.3 | -1.6 | -3.9 | -6.3 | -7.3 | -7.7 |
| FR5          | 0.02                                 | 0.00  | -0.03 | -0.06 | -0.13 | -0.35 | -0.43 | -0.35 | -0.30 | 0.6                                        | -0.1 | -0.8 | -1.4 | -3.0 | -7.3 | -8.0 | -6.2 | -5.2 |
| FR6          | -0.02                                | -0.04 | -0.08 | -0.11 | -0.20 | -0.45 | -0.37 | -0.28 | -0.25 | -0.6                                       | -0.9 | -1.9 | -2.6 | -4.4 | -8.6 | -6.4 | -4.8 | -4.1 |
| FR7          | -0.11                                | -0.14 | -0.17 | -0.32 | -0.36 | -0.17 | -0.15 | -0.16 | -0.17 | -2.5                                       | -3.1 | -3.6 | -6.2 | -6.1 | -2.7 | -2.4 | -2.5 | -2.5 |
| FR8          | -0.20                                | -0.22 | -0.32 | -0.33 | -0.20 | -0.11 | -0.12 | -0.10 | -0.17 | -4.2                                       | -4.3 | -6.0 | -5.9 | -3.2 | -1.7 | -1.7 | -1.5 | -2.4 |
| FR9          | -0.31                                | -0.24 | -0.18 | -0.16 | -0.09 | -0.07 | -0.08 | -0.04 | -0.04 | -5.5                                       | -4.1 | -3.0 | -2.5 | -1.3 | -1.0 | -1.1 | -0.5 | -0.6 |
| FR10         | -0.01                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | -0.01 | 0.00  | -0.2                                       | 0.0  | 0.1  | 0.0  | 0.0  | 0.1  | 0.1  | -0.2 | 0.0  |
| FR11         | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.01  | 0.00  | 0.00  | 0.01  | 0.00  | 0.0                                        | 0.1  | 0.0  | 0.1  | 0.1  | 0.0  | 0.0  | 0.1  | 0.1  |
| MR1          | -0.14                                | -0.13 | -0.14 | -0.14 | -0.18 | -0.21 | -0.27 | -0.28 | -0.20 | -3.0                                       | -2.9 | -3.0 | -2.8 | -3.4 | -3.7 | -4.6 | -4.9 | -3.3 |
| MR2          | -0.02                                | -0.03 | -0.04 | -0.12 | -0.15 | -0.20 | -0.21 | -0.22 | -0.23 | -0.5                                       | -0.8 | -0.9 | -2.5 | -2.9 | -3.6 | -3.7 | -3.7 | -3.9 |
| MR3          | 0.02                                 | -0.01 | 0.00  | -0.02 | -0.06 | -0.11 | -0.11 | -0.14 | -0.12 | 0.4                                        | -0.3 | -0.1 | -0.4 | -1.2 | -2.1 | -1.9 | -2.4 | -2.0 |
| MR4          | 0.03                                 | 0.02  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.04  | 0.02  | 0.7                                        | 0.4  | 0.2  | 0.2  | 0.1  | 0.0  | 0.1  | 0.8  | 0.3  |
| MR5          | -0.01                                | 0.01  | 0.02  | 0.04  | -0.07 | -0.01 | 0.00  | -0.01 | 0.02  | -0.6                                       | 0.2  | 0.8  | 1.1  | -1.3 | -0.1 | 0.1  | -0.1 | 0.3  |
| MR6          | 0.00                                 | 0.06  | 0.03  | 0.02  | 0.01  | -0.01 | 0.00  | 0.00  | 0.00  | -0.1                                       | 2.4  | 1.1  | 0.6  | 0.1  | -0.2 | 0.0  | -0.1 | 0.0  |
| LBR1         | 0.00                                 | 0.01  | 0.01  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.01  | 0.0                                        | 0.2  | 0.1  | 0.7  | 0.5  | 0.3  | 0.4  | 0.3  | 0.2  |
| LBR2         | -0.01                                | -0.01 | 0.00  | 0.01  | 0.01  | 0.00  | 0.03  | 0.03  | 0.01  | -0.2                                       | -0.2 | 0.0  | 0.2  | 0.2  | 0.1  | 0.6  | 0.6  | 0.1  |
| LBR3         | 0.05                                 | 0.09  | 0.06  | 0.05  | 0.05  | 0.05  | 0.08  | 0.05  | 0.04  | 1.5                                        | 2.5  | 1.8  | 1.4  | 1.3  | 1.3  | 1.8  | 1.3  | 0.8  |
| BR1          | 0.00                                 | 0.00  | 0.00  | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.1                                       | 0.0  | -0.1 | -0.6 | -0.8 | -0.9 | -1.2 | -1.2 | -1.3 |
| BR2          | 0.01                                 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.04 | -0.03 | -0.04 | 0.2                                        | -0.3 | -0.3 | -0.6 | -0.4 | -0.6 | -0.8 | -0.8 | -0.8 |
| BR3          | -0.03                                | -0.02 | -0.02 | -0.02 | -0.01 | 0.03  | -0.01 | 0.00  | 0.01  | -0.9                                       | -0.6 | -0.7 | -0.6 | -0.4 | 0.7  | -0.2 | 0.1  | 0.2  |
| SCh1         | -0.02                                | -0.01 | -0.02 | -0.01 | 0.00  | -0.01 | 0.00  | 0.01  | 0.05  | -0.7                                       | -0.3 | -0.5 | -0.3 | -0.1 | -0.3 | 0.0  | 0.1  | 1.2  |
| SCh2         | 0.01                                 | -0.01 | 0.00  | -0.03 | -0.03 | -0.04 | -0.07 | -0.05 | -0.04 | 0.2                                        | -0.1 | -0.1 | -0.6 | -0.7 | -1.0 | -1.4 | -1.1 | -0.8 |
| SR           | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.0                                        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| StbR         | -0.10                                | -0.08 | -0.11 | -0.11 | -0.14 | -0.13 | -0.14 | -0.14 | -0.15 | -2.0                                       | -1.6 | -2.1 | -2.0 | -2.3 | -2.1 | -2.3 | -2.8 | -2.3 |

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# **45 ft Channel Depth**

## *Mitigation Plan 6a*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
 Scenario: WASP-1997-Plan6a\_3ft

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.93                   | 3.98 | 4.03 | 4.2  | 4.34 | 4.5  | 4.61 | 4.64 | 4.71 |
| FR2  | 3.49                   | 4.07 | 4.16 | 4.32 | 4.47 | 4.62 | 4.78 | 4.84 | 4.95 |
| FR3  | 3.59                   | 3.64 | 3.69 | 3.95 | 4.08 | 4.3  | 4.68 | 5.2  | 5.55 |
| FR4  | 3.6                    | 3.64 | 3.69 | 3.97 | 4.08 | 4.29 | 4.76 | 5.23 | 5.61 |
| FR5  | 3.72                   | 3.77 | 3.86 | 4.06 | 4.2  | 4.38 | 5.01 | 5.27 | 5.47 |
| FR6  | 3.76                   | 3.84 | 3.91 | 4.12 | 4.24 | 4.47 | 5.18 | 5.48 | 5.63 |
| FR7  | 4.06                   | 4.18 | 4.23 | 4.41 | 4.66 | 5.38 | 6.05 | 6.21 | 6.39 |
| FR8  | 4.47                   | 4.56 | 4.72 | 5.03 | 5.87 | 6.26 | 6.51 | 6.66 | 6.86 |
| FR9  | 4.65                   | 4.73 | 4.92 | 5.23 | 5.97 | 6.43 | 6.68 | 6.76 | 7.01 |
| FR10 | 4.69                   | 5.04 | 5.22 | 5.55 | 5.9  | 6.31 | 6.6  | 6.85 | 7.15 |
| FR11 | 4.19                   | 4.59 | 4.81 | 5.11 | 5.66 | 6.14 | 6.4  | 6.65 | 6.94 |
| MR1  | 4.28                   | 4.4  | 4.53 | 4.74 | 5.02 | 5.29 | 5.68 | 5.82 | 6.14 |
| MR2  | 4.24                   | 4.39 | 4.51 | 4.73 | 5.02 | 5.33 | 5.63 | 5.8  | 5.9  |
| MR3  | 4.22                   | 4.39 | 4.47 | 4.68 | 4.95 | 5.22 | 5.49 | 5.68 | 5.89 |
| MR4  | 4.39                   | 4.46 | 4.6  | 4.78 | 5.05 | 5.3  | 5.57 | 5.68 | 5.97 |
| MR5  | 2.21                   | 2.8  | 3.11 | 3.84 | 5.35 | 6.19 | 6.52 | 6.78 | 7.04 |
| MR6  | 6.14                   | 6.32 | 6.47 | 6.64 | 6.9  | 7.23 | 7.41 | 7.51 | 7.62 |
| LBR1 | 4.01                   | 4.82 | 5.14 | 5.48 | 5.78 | 6.09 | 6.31 | 6.53 | 6.67 |
| LBR2 | 4.48                   | 4.59 | 4.7  | 4.92 | 5.14 | 5.39 | 5.56 | 5.7  | 6.48 |
| LBR3 | 2.59                   | 2.7  | 2.86 | 3.07 | 3.35 | 3.64 | 3.82 | 3.9  | 4.04 |
| BR1  | 1.62                   | 1.92 | 2.45 | 3.37 | 4.06 | 4.66 | 4.94 | 5.02 | 5.13 |
| BR2  | 1.29                   | 1.53 | 1.74 | 2.22 | 2.65 | 2.96 | 3.2  | 3.3  | 3.46 |
| BR3  | 1.48                   | 1.75 | 1.87 | 2.08 | 2.34 | 2.74 | 3.28 | 3.41 | 3.64 |
| SCH1 | 2.22                   | 2.57 | 2.68 | 2.87 | 3.21 | 4.03 | 4.33 | 4.45 | 4.61 |
| SCH2 | 3.74                   | 3.85 | 3.98 | 4.1  | 4.29 | 4.43 | 4.55 | 4.64 | 4.78 |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.62 | 5.96 | 6.1  | 6.15 | 6.22 |
| StbR | 3.95                   | 4.36 | 4.69 | 5.17 | 5.68 | 6.13 | 6.38 | 6.53 | 6.72 |



Delta D.O. Percentiles for Critical Cells  
Baseline: WASP-1997Existing  
Project: WASP-1997-Plan6a\_3ft

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       |
|      | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1  | 0.01                  | 0.3   | -0.01 | -0.3  | -0.02 | -0.5  | -0.02 | -0.4  | -0.04 | -0.9  | -0.02 | -0.4  |
| FR2  | -0.17                 | -4.6  | 0.31  | 8.2   | 0.32  | 8.3   | 0.29  | 7.2   | 0.25  | 5.9   | 0.22  | 5.0   |
| FR3  | 0.1                   | 2.9   | 0.05  | 1.4   | 0.05  | 1.4   | 0.08  | 2.1   | 0.03  | 0.7   | 0.01  | 0.2   |
| FR4  | -0.1                  | -2.9  | 0.08  | 2.2   | 0.07  | 1.9   | 0.05  | 1.3   | 0.01  | 0.2   | -0.11 | -2.5  |
| FR5  | 0.1                   | 2.8   | 0.03  | 0.8   | -0.03 | -0.8  | -0.02 | -0.5  | -0.11 | -2.6  | -0.51 | -10.4 |
| FR6  | 0.07                  | 1.9   | 0.08  | 2.1   | 0.02  | 0.5   | 0     | 0.0   | -0.02 | -0.5  | -0.31 | -6.5  |
| FR7  | -0.11                 | -2.6  | -0.07 | -1.6  | -0.1  | -2.3  | -0.2  | -4.3  | -0.37 | -7.4  | -0.6  | -10.0 |
| FR8  | -0.19                 | -4.1  | -0.22 | -4.6  | -0.34 | -6.7  | -0.48 | -6.7  | -0.25 | -4.1  | -0.18 | -2.8  |
| FR9  | -0.23                 | -4.7  | -0.3  | -6.0  | -0.41 | -7.7  | -0.49 | -6.6  | -0.31 | -4.9  | -0.17 | -2.6  |
| FR10 | 0.38                  | 8.8   | 0.26  | 5.4   | 0.27  | 5.5   | 0.23  | 4.3   | -0.01 | -0.2  | -0.12 | -1.9  |
| FR11 | 0.02                  | 0.5   | -0.11 | -2.3  | -0.12 | -2.4  | -0.13 | -2.5  | -0.01 | -0.2  | 0     | 0.0   |
| MR1  | -0.13                 | -2.9  | -0.13 | -2.9  | -0.09 | -1.9  | -0.15 | -3.1  | -0.14 | -2.7  | -0.3  | -5.4  |
| MR2  | 0.21                  | 5.2   | 0.24  | 5.8   | 0.18  | 4.2   | 0.11  | 2.4   | -0.05 | -1.0  | -0.2  | -3.6  |
| MR3  | 0.52                  | 14.1  | 0.5   | 12.9  | 0.47  | 11.8  | 0.49  | 11.7  | 0.43  | 9.5   | 0.15  | 3.0   |
| MR4  | 0.5                   | 12.9  | 0.43  | 10.7  | 0.48  | 11.7  | 0.39  | 8.9   | 0.44  | 9.5   | 0.41  | 8.4   |
| MR5  | 0.72                  | 48.3  | 0.76  | 37.3  | 0.7   | 29.0  | 0.79  | 25.9  | 0.38  | 7.6   | -0.04 | -0.6  |
| MR6  | 4.03                  | 191.0 | 3.83  | 153.8 | 3.46  | 115.0 | 3.13  | 89.2  | 1.29  | 23.0  | 0.87  | 13.7  |
| LBR1 | 0.44                  | 12.3  | 0.47  | 10.8  | 0.39  | 8.2   | 0.35  | 6.8   | 0.35  | 6.4   | 0.45  | 8.0   |
| LBR2 | 0.79                  | 21.4  | 0.73  | 18.9  | 0.73  | 18.4  | 0.76  | 18.3  | 0.75  | 17.1  | 0.79  | 17.2  |
| LBR3 | -0.3                  | -10.4 | -0.58 | -17.7 | -0.61 | -17.6 | -0.61 | -16.6 | -0.6  | -15.2 | -0.7  | -16.1 |
| BR1  | -1.66                 | -50.6 | -1.49 | -43.7 | -1.12 | -31.4 | -0.37 | -9.9  | 0.09  | 2.3   | 0.46  | 11.0  |
| BR2  | -1.26                 | -49.4 | -1.31 | -46.1 | -1.25 | -41.8 | -1.02 | -31.5 | -0.79 | -23.0 | -0.74 | -20.0 |
| BR3  | -1.55                 | -51.2 | -1.51 | -46.3 | -1.57 | -45.6 | -1.54 | -42.5 | -1.44 | -38.1 | -1.21 | -30.6 |
| SCH1 | -0.17                 | -7.1  | 0     | 0.0   | 0     | 0.0   | 0.04  | 1.4   | 0.2   | 6.6   | 0.62  | 18.2  |
| SCH2 | 0                     | 0.0   | -0.06 | -1.5  | -0.03 | -0.7  | -0.04 | -1.0  | -0.04 | -0.9  | -0.04 | -0.9  |
| SR   | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | 0     | 0.0   | -0.01 | -0.2  |
| slR  | 0.11                  | 2.9   | 0.14  | 3.3   | 0.12  | 2.6   | 0.13  | 2.6   | -0.01 | -0.2  | -0.07 | -1.1  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31  
 Project Scenario: WASP-1997-Plan6a\_3ft

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.15                                  | 4.21 | 4.28 | 4.38 | 4.49 | 4.58 | 4.66 | 4.73 | 4.78 |
| FR2       | 3.97                                  | 4.00 | 4.04 | 4.28 | 4.39 | 4.53 | 4.64 | 4.68 | 4.76 |
| FR3       | 3.78                                  | 3.83 | 3.89 | 4.09 | 4.23 | 4.38 | 4.64 | 4.70 | 4.80 |
| FR4       | 3.74                                  | 3.77 | 3.79 | 4.05 | 4.14 | 4.29 | 4.74 | 4.99 | 5.24 |
| FR5       | 3.79                                  | 3.82 | 3.92 | 4.11 | 4.24 | 4.48 | 5.07 | 5.39 | 5.55 |
| FR6       | 3.95                                  | 3.99 | 4.05 | 4.27 | 4.41 | 4.76 | 5.45 | 5.70 | 5.84 |
| FR7       | 4.32                                  | 4.42 | 4.52 | 4.78 | 5.41 | 5.98 | 6.23 | 6.36 | 6.47 |
| FR8       | 4.64                                  | 4.77 | 4.93 | 5.28 | 5.88 | 6.30 | 6.51 | 6.61 | 6.75 |
| FR9       | 5.29                                  | 5.54 | 5.73 | 6.02 | 6.42 | 6.68 | 6.94 | 7.14 | 7.25 |
| FR10      | 5.46                                  | 5.76 | 5.90 | 6.15 | 6.48 | 6.73 | 7.09 | 7.19 | 7.29 |
| FR11      | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.49 | 5.76 | 5.99 | 6.12 | 6.30 |
| MR1       | 4.34                                  | 4.48 | 4.59 | 4.78 | 5.02 | 5.30 | 5.60 | 5.76 | 5.87 |
| MR2       | 4.28                                  | 4.43 | 4.58 | 4.79 | 5.02 | 5.26 | 5.57 | 5.74 | 5.86 |
| MR3       | 4.32                                  | 4.43 | 4.54 | 4.74 | 4.97 | 5.20 | 5.35 | 5.41 | 5.57 |
| MR4       | 4.75                                  | 4.90 | 5.02 | 5.21 | 5.51 | 5.74 | 5.95 | 6.14 | 6.29 |
| MR5       | 3.26                                  | 3.52 | 3.90 | 4.36 | 5.60 | 6.18 | 6.49 | 6.75 | 6.95 |
| MR6       | 2.96                                  | 3.23 | 3.43 | 3.70 | 4.21 | 4.68 | 4.89 | 5.04 | 5.14 |
| LBR1      | 4.61                                  | 4.93 | 5.00 | 5.25 | 5.49 | 5.71 | 5.94 | 6.07 | 6.17 |
| LBR2      | 4.32                                  | 4.42 | 4.51 | 4.70 | 4.94 | 5.15 | 5.31 | 5.40 | 5.52 |
| LBR3      | 3.35                                  | 3.46 | 3.58 | 3.74 | 3.96 | 4.18 | 4.37 | 4.43 | 4.57 |
| BR1       | 2.42                                  | 3.07 | 3.49 | 4.00 | 4.28 | 4.50 | 4.67 | 4.71 | 4.84 |
| BR2       | 1.71                                  | 1.99 | 2.16 | 2.55 | 3.12 | 3.63 | 3.94 | 4.09 | 4.31 |
| BR3       | 2.11                                  | 2.22 | 2.35 | 2.51 | 2.64 | 2.80 | 2.95 | 3.04 | 3.10 |
| SCh1      | 3.38                                  | 3.52 | 3.60 | 3.74 | 3.83 | 3.93 | 4.01 | 4.06 | 4.16 |
| SCh2      | 3.94                                  | 4.02 | 4.08 | 4.25 | 4.36 | 4.47 | 4.57 | 4.62 | 4.69 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.41 | 6.47 |
| StbR      | 4.81                                  | 4.94 | 5.09 | 5.37 | 5.71 | 5.93 | 6.12 | 6.19 | 6.35 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline inario: WASP1997Existing

Project ario: WASP-1997-Plan6a\_3ft

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |     |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |     |
| FR1       | 0.02                                 | 0.01  | 0.02  | 0.00  | -0.01 | -0.02 | -0.06 | -0.07 | -0.06 |  | 0.6                                        | 0.3   | 0.5   | 0.1   | -0.2  | -0.4  | -1.3  | -1.4  | -1.3  |     |
| FR2       | 0.03                                 | 0.01  | 0.00  | 0.02  | 0.02  | -0.01 | -0.01 | -0.01 | 0.00  |  | 0.7                                        | 0.2   | 0.1   | 0.5   | 0.4   | -0.2  | -0.2  | 0.1   | -0.2  | 0.1 |
| FR3       | 0.08                                 | 0.06  | 0.06  | 0.06  | 0.04  | 0.00  | -0.07 | -0.08 | -0.19 |  | 2.2                                        | 1.6   | 1.6   | 1.5   | 0.9   | -0.1  | -1.5  | -1.7  | -3.9  |     |
| FR4       | 0.08                                 | 0.06  | 0.05  | 0.07  | 0.02  | -0.08 | -0.19 | -0.32 | -0.31 |  | 2.1                                        | 1.7   | 1.3   | 1.7   | 0.5   | -1.9  | -3.9  | -6.0  | -5.6  |     |
| FR5       | 0.11                                 | 0.06  | 0.04  | 0.04  | -0.03 | -0.28 | -0.34 | -0.26 | -0.25 |  | 3.0                                        | 1.5   | 1.0   | 0.9   | -0.7  | -5.9  | -6.2  | -4.6  | -4.3  |     |
| FR6       | -0.01                                | -0.02 | -0.06 | -0.05 | -0.14 | -0.43 | -0.32 | -0.22 | -0.20 |  | -0.2                                       | -0.4  | -1.5  | -1.1  | -3.1  | -8.3  | -5.6  | -3.7  | -3.3  |     |
| FR7       | -0.12                                | -0.13 | -0.17 | -0.31 | -0.44 | -0.21 | -0.19 | -0.20 | -0.23 |  | -2.7                                       | -2.9  | -3.6  | -6.2  | -7.6  | -3.3  | -2.9  | -3.1  | -3.4  |     |
| FR8       | -0.22                                | -0.28 | -0.36 | -0.38 | -0.28 | -0.13 | -0.16 | -0.19 | -0.23 |  | -4.4                                       | -5.6  | -6.8  | -6.8  | -4.5  | -2.1  | -2.4  | -2.9  | -3.3  |     |
| FR9       | -0.37                                | -0.36 | -0.29 | -0.24 | -0.12 | -0.13 | -0.13 | -0.09 | -0.09 |  | -6.6                                       | -6.1  | -4.8  | -3.8  | -1.8  | -1.9  | -1.9  | -1.2  | -1.2  |     |
| FR10      | -0.25                                | -0.09 | -0.11 | -0.15 | -0.09 | -0.08 | -0.07 | -0.05 | -0.04 |  | -4.4                                       | -1.5  | -1.9  | -2.4  | -1.3  | -1.2  | -1.0  | -0.7  | -0.5  |     |
| FR11      | -0.33                                | -0.35 | -0.36 | -0.41 | -0.39 | -0.41 | -0.46 | -0.43 | -0.38 |  | -6.9                                       | -6.9  | -6.9  | -7.3  | -6.6  | -6.7  | -7.1  | -6.6  | -5.7  |     |
| MR1       | -0.14                                | -0.11 | -0.11 | -0.11 | -0.15 | -0.24 | -0.24 | -0.21 | -0.17 |  | -3.0                                       | -2.3  | -2.4  | -2.2  | -3.0  | -4.4  | -4.1  | -3.6  | -2.9  |     |
| MR2       | 0.09                                 | 0.12  | 0.07  | 0.00  | -0.11 | -0.24 | -0.23 | -0.17 | -0.17 |  | 2.1                                        | 2.7   | 1.6   | 0.1   | -2.0  | -4.3  | -4.0  | -2.8  | -2.9  |     |
| MR3       | 0.47                                 | 0.39  | 0.44  | 0.36  | 0.24  | -0.02 | -0.24 | -0.31 | -0.28 |  | 12.1                                       | 9.7   | 10.7  | 8.1   | 5.0   | -0.4  | -4.2  | -5.4  | -4.7  |     |
| MR4       | 0.36                                 | 0.40  | 0.40  | 0.43  | 0.45  | 0.50  | 0.51  | 0.60  | 0.59  |  | 8.2                                        | 8.8   | 8.7   | 9.0   | 9.0   | 9.4   | 9.4   | 10.8  | 10.4  |     |
| MR5       | 0.95                                 | 0.97  | 0.93  | 0.89  | 0.26  | 0.02  | -0.03 | -0.07 | -0.06 |  | 41.1                                       | 37.9  | 31.5  | 25.8  | 4.9   | 0.3   | -0.5  | -1.0  | -0.8  |     |
| MR6       | 0.81                                 | 0.70  | 0.38  | 0.12  | -1.48 | -1.65 | -1.92 | -1.90 | -2.14 |  | 37.9                                       | 27.5  | 12.3  | 3.4   | -26.0 | -26.1 | -28.2 | -27.4 | -29.4 |     |
| LBR1      | 0.32                                 | 0.44  | 0.41  | 0.45  | 0.50  | 0.52  | 0.65  | 0.62  | 0.60  |  | 7.3                                        | 9.8   | 8.9   | 9.4   | 10.0  | 9.9   | 12.2  | 11.4  | 10.7  |     |
| LBR2      | 0.62                                 | 0.61  | 0.55  | 0.57  | 0.59  | 0.59  | 0.60  | 0.63  | 0.63  |  | 16.7                                       | 16.1  | 13.9  | 13.8  | 13.5  | 13.0  | 12.7  | 13.2  | 12.9  |     |
| LBR3      | -0.19                                | -0.12 | -0.08 | -0.04 | 0.01  | 0.07  | 0.13  | 0.08  | 0.11  |  | -5.3                                       | -3.2  | -2.1  | -1.1  | 0.2   | 1.7   | 2.9   | 1.8   | 2.4   |     |
| BR1       | -1.10                                | -0.51 | -0.15 | 0.10  | 0.24  | 0.29  | 0.24  | 0.21  | 0.24  |  | -31.3                                      | -14.3 | -4.1  | 2.6   | 6.0   | 6.8   | 5.4   | 4.6   | 5.3   |     |
| BR2       | -1.59                                | -1.39 | -1.30 | -1.07 | -0.69 | -0.36 | -0.20 | -0.20 | -0.08 |  | -48.3                                      | -41.2 | -37.7 | -29.5 | -18.1 | -8.9  | -4.8  | -4.7  | -1.8  |     |
| BR3       | -1.35                                | -1.28 | -1.21 | -1.12 | -1.10 | -1.05 | -1.02 | -0.96 | -0.92 |  | -39.1                                      | -36.6 | -33.9 | -30.9 | -29.5 | -27.2 | -25.7 | -23.9 | -22.8 |     |
| SCh1      | -0.12                                | -0.04 | -0.02 | 0.02  | 0.00  | -0.02 | -0.03 | -0.03 | -0.01 |  | -3.5                                       | -1.2  | -0.7  | 0.4   | 0.0   | -0.6  | -0.7  | -0.8  | -0.2  |     |
| SCh2      | 0.00                                 | -0.02 | -0.01 | 0.00  | -0.02 | -0.02 | -0.04 | -0.03 | -0.04 |  | -0.1                                       | -0.5  | -0.3  | -0.1  | -0.4  | -0.4  | -0.8  | -0.6  | -0.8  |     |
| SR        | 0.00                                 | 0.00  | 0.00  | -0.01 | -0.01 | 0.00  | -0.01 | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |     |
| StbR      | 0.07                                 | 0.02  | 0.00  | -0.07 | -0.09 | -0.16 | -0.18 | -0.23 | -0.21 |  | 1.5                                        | 0.3   | 0.0   | -1.2  | -1.5  | -2.5  | -2.8  | -3.6  | -3.2  |     |

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# **45 ft Channel Depth**

*Mitigation Plan 6a*

*D.O. Mitigation*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
Scenario: 6A3ft-withDOMitigation

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.99                   | 4.04 | 4.08 | 4.28 | 4.42 | 4.61 | 4.74 | 4.79 | 4.86 |
| FR2  | 3.85                   | 3.95 | 4.02 | 4.28 | 4.46 | 4.63 | 4.93 | 4.98 | 5.03 |
| FR3  | 3.72                   | 3.78 | 3.84 | 4.14 | 4.31 | 4.6  | 5.11 | 5.62 | 5.99 |
| FR4  | 3.74                   | 3.78 | 3.84 | 4.16 | 4.32 | 4.6  | 5.15 | 5.62 | 6.05 |
| FR5  | 3.88                   | 3.91 | 4.02 | 4.27 | 4.43 | 4.71 | 5.44 | 5.73 | 5.93 |
| FR6  | 3.92                   | 4.01 | 4.1  | 4.36 | 4.51 | 4.82 | 5.61 | 5.94 | 6.12 |
| FR7  | 4.27                   | 4.39 | 4.47 | 4.72 | 5    | 5.87 | 6.6  | 6.82 | 6.92 |
| FR8  | 4.77                   | 4.88 | 5.07 | 5.43 | 6.54 | 7.4  | 7.99 | 8.18 | 8.48 |
| FR9  | 5.8                    | 6.29 | 6.41 | 6.72 | 7.08 | 7.52 | 7.95 | 8.32 | 8.94 |
| FR10 | 4.69                   | 5.04 | 5.22 | 5.55 | 5.9  | 6.31 | 6.6  | 6.85 | 7.15 |
| FR11 | 4.19                   | 4.59 | 4.81 | 5.11 | 5.66 | 6.14 | 6.4  | 6.65 | 6.94 |
| MR1  | 4.55                   | 4.73 | 4.82 | 5.04 | 5.32 | 5.68 | 6.1  | 6.28 | 6.36 |
| MR2  | 4.39                   | 4.53 | 4.65 | 4.89 | 5.22 | 5.65 | 5.95 | 6.23 | 6.36 |
| MR3  | 4.32                   | 4.44 | 4.57 | 4.73 | 5.06 | 5.36 | 5.61 | 5.79 | 6.01 |
| MR4  | 4.47                   | 4.6  | 4.67 | 4.85 | 5.14 | 5.36 | 5.58 | 5.68 | 5.97 |
| MR5  | 2.21                   | 2.8  | 3.11 | 3.84 | 5.35 | 6.19 | 6.52 | 6.78 | 7.04 |
| MR6  | 6.14                   | 6.32 | 6.47 | 6.64 | 6.9  | 7.23 | 7.41 | 7.51 | 7.62 |
| LBR1 | 4.01                   | 4.82 | 5.14 | 5.49 | 5.79 | 6.09 | 6.31 | 6.53 | 6.67 |
| LBR2 | 4.48                   | 4.59 | 4.7  | 4.92 | 5.14 | 5.38 | 5.56 | 5.7  | 6.48 |
| LBR3 | 2.61                   | 2.7  | 2.86 | 3.07 | 3.34 | 3.65 | 3.82 | 3.9  | 4.04 |
| BR1  | 3.77                   | 4.45 | 4.72 | 4.91 | 5.06 | 5.26 | 5.47 | 5.61 | 5.73 |
| BR2  | 2.44                   | 2.64 | 2.85 | 3.28 | 4.44 | 5.16 | 5.37 | 5.49 | 5.66 |
| BR3  | 2.32                   | 2.41 | 2.47 | 2.58 | 2.78 | 3.02 | 3.4  | 3.66 | 3.97 |
| SCH1 | 2.34                   | 2.68 | 2.78 | 2.98 | 3.28 | 4.09 | 4.39 | 4.49 | 4.64 |
| SCH2 | 3.89                   | 4.02 | 4.14 | 4.27 | 4.45 | 4.6  | 4.7  | 4.78 | 4.93 |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.62 | 5.96 | 6.1  | 6.15 | 6.22 |
| StbR | 4.21                   | 4.74 | 5.11 | 5.7  | 6.39 | 6.95 | 7.37 | 7.59 | 7.89 |

**Delta D.O. Percentiles for Critical Cells**  
 Baseline: WASP1997Existing  
 Project: Scenario: 6A3ft-withDilution

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99    | 1%    | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99    |
| FR1  | 0.07                  | 1.8   | 0.05  | 1.3   | 0.03  | 0.7   | 0.06  | 1.4   | 0.04  | 0.9   | 0.09  | 2.0   | 0.11  | 2.4   | 0.09  | 1.9   | 0.12  | 2.5   |
| FR2  | 0.19                  | 5.2   | 0.19  | 5.1   | 0.18  | 4.7   | 0.25  | 6.2   | 0.24  | 5.7   | 0.23  | 5.2   | 0.31  | 6.7   | 0.29  | 6.2   | -0.05 | -1.0  |
| FR3  | 0.23                  | 6.6   | 0.19  | 5.3   | 0.2   | 5.5   | 0.27  | 7.0   | 0.26  | 6.4   | 0.31  | 7.2   | 0.33  | 6.9   | 0.55  | 10.8  | 0.39  | 7.0   |
| FR4  | 0.24                  | 6.9   | 0.22  | 6.2   | 0.22  | 6.1   | 0.24  | 6.1   | 0.25  | 6.1   | 0.2   | 4.5   | 0.19  | 3.8   | 0.31  | 5.8   | 0.55  | 10.0  |
| FR6  | 0.28                  | 7.2   | 0.17  | 4.5   | 0.13  | 3.3   | 0.19  | 4.7   | 0.12  | 2.8   | -0.18 | -3.7  | 0.02  | 0.4   | 0.1   | 1.8   | 0.15  | 2.8   |
| FR6  | 0.23                  | 6.2   | 0.25  | 6.6   | 0.21  | 5.4   | 0.24  | 5.8   | 0.25  | 5.9   | 0.04  | 0.8   | 0.04  | 0.7   | 0.17  | 2.9   | 0.21  | 3.6   |
| FR7  | 0.1                   | 2.4   | 0.14  | 3.3   | 0.14  | 3.2   | 0.11  | 2.4   | -0.03 | -0.6  | -0.11 | -1.8  | 0.34  | 5.4   | 0.46  | 7.2   | 0.43  | 6.6   |
| FR8  | 0.11                  | 2.4   | 0.1   | 2.1   | 0.01  | 0.2   | -0.08 | -1.5  | 0.42  | 6.9   | 0.96  | 14.9  | 1.27  | 18.9  | 1.33  | 19.4  | 1.37  | 19.3  |
| FR9  | 0.92                  | 18.9  | 1.26  | 25.0  | 1.08  | 20.3  | 1     | 17.5  | 0.8   | 12.7  | 0.92  | 13.9  | 1.1   | 16.1  | 1.3   | 18.5  | 1.75  | 24.3  |
| FR10 | 0.38                  | 8.8   | 0.26  | 5.4   | 0.27  | 5.5   | 0.23  | 4.3   | -0.01 | -0.2  | -0.12 | -1.9  | -0.08 | -1.2  | -0.16 | -2.3  | -0.07 | -1.0  |
| FR11 | 0.02                  | 0.5   | -0.11 | -2.3  | -0.12 | -2.4  | -0.13 | -2.5  | -0.01 | -0.2  | 0     | 0.0   | -0.1  | -1.5  | 0.01  | 0.2   | -0.19 | -2.7  |
| MR1  | 0.14                  | 3.2   | 0.2   | 4.4   | 0.2   | 4.3   | 0.15  | 3.1   | 0.18  | 3.1   | 0.09  | 1.6   | 0.21  | 3.6   | 0.28  | 4.7   | 0.14  | 2.3   |
| MR2  | 0.36                  | 8.9   | 0.38  | 9.2   | 0.32  | 7.4   | 0.27  | 5.8   | 0.15  | 3.0   | 0.12  | 2.2   | 0.15  | 2.6   | 0.33  | 5.6   | 0.33  | 5.5   |
| MR3  | 0.62                  | 16.8  | 0.55  | 14.1  | 0.57  | 14.3  | 0.54  | 12.9  | 0.54  | 11.9  | 0.29  | 5.7   | -0.1  | -1.8  | -0.14 | -2.4  | -0.18 | -2.9  |
| MR4  | 0.58                  | 14.9  | 0.57  | 14.1  | 0.55  | 13.3  | 0.46  | 10.5  | 0.53  | 11.5  | 0.47  | 9.6   | 0.52  | 10.3  | 0.5   | 9.7   | 0.56  | 10.4  |
| MR5  | 0.72                  | 48.3  | 0.76  | 37.3  | 0.7   | 29.0  | 0.79  | 25.9  | 0.38  | 7.6   | -0.04 | -0.6  | -0.05 | -0.8  | -0.11 | -1.6  | -0.07 | -1.0  |
| MR6  | 4.03                  | 191.0 | 3.83  | 153.8 | 3.46  | 115.0 | 3.13  | 89.2  | 1.29  | 23.0  | 0.87  | 13.7  | 0.61  | 9.0   | 0.45  | 6.4   | 0.3   | 4.1   |
| LBR1 | 0.44                  | 12.3  | 0.47  | 10.8  | 0.39  | 8.2   | 0.36  | 7.0   | 0.36  | 6.6   | 0.45  | 8.0   | 0.34  | 5.7   | 0.37  | 6.0   | 0.2   | 3.1   |
| LBR2 | 0.79                  | 21.4  | 0.73  | 18.9  | 0.73  | 18.4  | 0.76  | 18.3  | 0.75  | 17.1  | 0.78  | 17.0  | 0.79  | 16.6  | 0.82  | 16.8  | 1.22  | 23.2  |
| LBR3 | -0.28                 | -9.7  | -0.58 | -17.7 | -0.61 | -17.6 | -0.61 | -16.6 | -0.61 | -15.4 | -0.89 | -15.9 | -0.91 | -19.2 | -1.09 | -21.8 | -1.2  | -22.9 |
| BR1  | 0.49                  | 14.9  | 1.04  | 30.5  | 1.15  | 32.2  | 1.17  | 31.3  | 1.09  | 27.5  | 1.06  | 25.2  | 1.04  | 23.5  | 1.08  | 23.8  | 1.09  | 23.5  |
| BR2  | -0.11                 | -4.3  | -0.2  | -7.0  | -0.14 | -4.7  | 0.04  | 1.2   | 1     | 29.1  | 1.46  | 39.5  | 1.53  | 39.8  | 1.56  | 39.7  | 1.63  | 40.4  |
| BR3  | -0.71                 | -23.4 | -0.85 | -26.1 | -0.97 | -28.2 | -1.04 | -28.7 | -1    | -26.5 | -0.93 | -23.5 | -0.88 | -16.7 | -0.49 | -11.8 | -0.28 | -6.6  |
| SCH1 | -0.05                 | -2.1  | 0.11  | 4.3   | 0.1   | 3.7   | 0.15  | 5.3   | 0.27  | 9.0   | 0.68  | 19.9  | 0.62  | 16.4  | 0.6   | 15.4  | 0.5   | 12.1  |
| SCH2 | 0.15                  | 4.0   | 0.11  | 2.8   | 0.13  | 3.2   | 0.13  | 3.1   | 0.12  | 2.8   | 0.13  | 2.9   | 0.1   | 2.2   | 0.1   | 2.1   | 0.11  | 2.3   |
| SR   | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | 0     | 0.0   | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |
| SubR | 0.37                  | 9.6   | 0.52  | 12.3  | 0.54  | 11.8  | 0.66  | 13.1  | 0.7   | 12.3  | 0.75  | 12.1  | 0.88  | 13.6  | 0.95  | 14.3  | 1.05  | 15.4  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Project:enario: 6A3ft-withDOmitigation

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.19                                  | 4.24 | 4.31 | 4.42 | 4.53 | 4.63 | 4.70 | 4.75 | 4.80 |
| FR2       | 4.07                                  | 4.09 | 4.13 | 4.42 | 4.54 | 4.72 | 4.86 | 4.93 | 4.99 |
| FR3       | 3.90                                  | 3.97 | 4.02 | 4.29 | 4.44 | 4.61 | 5.01 | 5.06 | 5.17 |
| FR4       | 3.87                                  | 3.92 | 3.95 | 4.25 | 4.39 | 4.58 | 5.15 | 5.41 | 5.69 |
| FR5       | 3.94                                  | 3.98 | 4.10 | 4.34 | 4.50 | 4.82 | 5.53 | 5.84 | 6.03 |
| FR6       | 4.14                                  | 4.19 | 4.26 | 4.53 | 4.72 | 5.16 | 5.92 | 6.20 | 6.34 |
| FR7       | 4.58                                  | 4.69 | 4.85 | 5.13 | 5.90 | 6.51 | 6.89 | 7.00 | 7.08 |
| FR8       | 4.98                                  | 5.15 | 5.31 | 5.72 | 6.61 | 7.30 | 7.83 | 7.94 | 8.14 |
| FR9       | 6.29                                  | 6.54 | 6.68 | 6.96 | 7.20 | 7.47 | 7.73 | 7.92 | 8.03 |
| FR10      | 5.46                                  | 5.76 | 5.91 | 6.17 | 6.52 | 6.79 | 7.11 | 7.23 | 7.43 |
| FR11      | 4.54                                  | 4.75 | 4.91 | 5.18 | 5.49 | 5.76 | 5.99 | 6.12 | 6.30 |
| MR1       | 4.61                                  | 4.75 | 4.87 | 5.10 | 5.34 | 5.65 | 6.05 | 6.24 | 6.34 |
| MR2       | 4.44                                  | 4.61 | 4.74 | 5.01 | 5.29 | 5.61 | 5.94 | 6.22 | 6.32 |
| MR3       | 4.41                                  | 4.52 | 4.64 | 4.82 | 5.09 | 5.36 | 5.54 | 5.68 | 5.84 |
| MR4       | 4.79                                  | 4.92 | 5.03 | 5.23 | 5.52 | 5.75 | 5.96 | 6.14 | 6.29 |
| MR5       | 3.26                                  | 3.52 | 3.90 | 4.36 | 5.60 | 6.18 | 6.49 | 6.75 | 6.95 |
| MR6       | 2.96                                  | 3.23 | 3.43 | 3.70 | 4.21 | 4.68 | 4.89 | 5.04 | 5.14 |
| LBR1      | 4.61                                  | 4.93 | 5.00 | 5.25 | 5.49 | 5.71 | 5.94 | 6.07 | 6.17 |
| LBR2      | 4.32                                  | 4.42 | 4.51 | 4.70 | 4.94 | 5.15 | 5.31 | 5.40 | 5.53 |
| LBR3      | 3.35                                  | 3.46 | 3.58 | 3.74 | 3.96 | 4.18 | 4.37 | 4.43 | 4.57 |
| BR1       | 4.48                                  | 4.71 | 4.84 | 5.05 | 5.35 | 5.67 | 5.81 | 5.95 | 6.03 |
| BR2       | 2.94                                  | 3.48 | 3.79 | 4.34 | 5.10 | 5.38 | 5.60 | 5.71 | 5.79 |
| BR3       | 2.74                                  | 2.81 | 2.87 | 2.99 | 3.20 | 3.47 | 3.72 | 3.89 | 4.06 |
| SCh1      | 3.49                                  | 3.60 | 3.70 | 3.85 | 3.94 | 4.02 | 4.09 | 4.14 | 4.22 |
| SCh2      | 4.08                                  | 4.16 | 4.20 | 4.39 | 4.52 | 4.63 | 4.72 | 4.77 | 4.84 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.41 | 6.47 |
| StbR      | 5.10                                  | 5.36 | 5.53 | 5.87 | 6.31 | 6.64 | 6.90 | 7.02 | 7.21 |

Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline:nario: WASP1997Existing

Project ario: 6A3ft-withDOmitigation

| Zone<br>Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|--------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|              | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1          | 0.06                                 | 0.04  | 0.04  | 0.04  | 0.03  | 0.03  | -0.03 | -0.05 | -0.04 |  | 1.4                                        | 1.0   | 1.1   | 1.0   | 0.8   | 0.7   | -0.6  | -1.0  | -0.9  |  |
| FR2          | 0.13                                 | 0.10  | 0.10  | 0.16  | 0.17  | 0.19  | 0.21  | 0.25  | 0.23  |  | 3.2                                        | 2.5   | 2.4   | 3.8   | 3.9   | 4.1   | 4.5   | 5.3   | 4.9   |  |
| FR3          | 0.21                                 | 0.20  | 0.19  | 0.26  | 0.25  | 0.23  | 0.29  | 0.27  | 0.18  |  | 5.6                                        | 5.3   | 4.9   | 6.5   | 5.9   | 5.2   | 6.2   | 5.7   | 3.6   |  |
| FR4          | 0.22                                 | 0.21  | 0.20  | 0.27  | 0.27  | 0.20  | 0.22  | 0.11  | 0.15  |  | 5.9                                        | 5.7   | 5.3   | 6.6   | 6.5   | 4.7   | 4.5   | 2.0   | 2.6   |  |
| FR5          | 0.26                                 | 0.22  | 0.22  | 0.26  | 0.22  | 0.06  | 0.11  | 0.20  | 0.24  |  | 7.0                                        | 5.8   | 5.6   | 6.3   | 5.2   | 1.2   | 2.1   | 3.5   | 4.1   |  |
| FR6          | 0.18                                 | 0.17  | 0.14  | 0.21  | 0.17  | -0.03 | 0.15  | 0.27  | 0.30  |  | 4.5                                        | 4.3   | 3.5   | 4.8   | 3.7   | -0.7  | 2.5   | 4.6   | 4.9   |  |
| FR7          | 0.14                                 | 0.14  | 0.16  | 0.04  | 0.05  | 0.32  | 0.48  | 0.44  | 0.38  |  | 3.1                                        | 3.1   | 3.4   | 0.9   | 0.8   | 5.2   | 7.4   | 6.7   | 5.6   |  |
| FR8          | 0.12                                 | 0.09  | 0.02  | 0.06  | 0.46  | 0.87  | 1.15  | 1.13  | 1.17  |  | 2.5                                        | 1.9   | 0.4   | 1.0   | 7.5   | 13.5  | 17.2  | 16.8  | 16.7  |  |
| FR9          | 0.62                                 | 0.64  | 0.66  | 0.70  | 0.67  | 0.66  | 0.66  | 0.69  | 0.70  |  | 10.9                                       | 10.9  | 11.0  | 11.1  | 10.2  | 9.8   | 9.4   | 9.6   | 9.5   |  |
| FR10         | -0.25                                | -0.09 | -0.11 | -0.13 | -0.05 | -0.02 | -0.05 | -0.01 | 0.11  |  | -4.4                                       | -1.5  | -1.8  | -2.0  | -0.7  | -0.3  | -0.7  | -0.1  | 1.5   |  |
| FR11         | -0.33                                | -0.35 | -0.36 | -0.41 | -0.39 | -0.41 | -0.46 | -0.43 | -0.38 |  | -6.9                                       | -6.9  | -6.9  | -7.3  | -6.6  | -6.7  | -7.1  | -6.6  | -5.7  |  |
| MR1          | 0.13                                 | 0.17  | 0.17  | 0.20  | 0.17  | 0.11  | 0.20  | 0.28  | 0.30  |  | 2.9                                        | 3.7   | 3.6   | 4.2   | 3.2   | 2.0   | 3.5   | 4.6   | 5.0   |  |
| MR2          | 0.24                                 | 0.30  | 0.23  | 0.23  | 0.16  | 0.12  | 0.14  | 0.31  | 0.29  |  | 5.7                                        | 6.9   | 5.1   | 4.7   | 3.1   | 2.2   | 2.4   | 5.3   | 4.9   |  |
| MR3          | 0.56                                 | 0.48  | 0.53  | 0.44  | 0.36  | 0.13  | -0.05 | -0.04 | -0.01 |  | 14.5                                       | 11.9  | 12.9  | 10.0  | 7.5   | 2.6   | -0.9  | -0.7  | -0.1  |  |
| MR4          | 0.40                                 | 0.42  | 0.41  | 0.45  | 0.47  | 0.51  | 0.52  | 0.60  | 0.60  |  | 9.1                                        | 9.3   | 8.9   | 9.4   | 9.2   | 9.7   | 9.5   | 10.9  | 10.4  |  |
| MR5          | 0.95                                 | 0.97  | 0.93  | 0.90  | 0.26  | 0.02  | -0.03 | -0.07 | -0.06 |  | 41.1                                       | 37.9  | 31.5  | 25.8  | 4.9   | 0.3   | -0.5  | -1.0  | -0.8  |  |
| MR6          | 0.81                                 | 0.70  | 0.38  | 0.12  | -1.48 | -1.65 | -1.92 | -1.90 | -2.14 |  | 37.9                                       | 27.5  | 12.3  | 3.4   | -26.0 | -26.1 | -28.2 | -27.4 | -29.4 |  |
| LBR1         | 0.32                                 | 0.44  | 0.41  | 0.45  | 0.50  | 0.52  | 0.65  | 0.62  | 0.60  |  | 7.3                                        | 9.8   | 8.9   | 9.4   | 10.0  | 9.9   | 12.2  | 11.4  | 10.7  |  |
| LBR2         | 0.62                                 | 0.61  | 0.55  | 0.57  | 0.59  | 0.59  | 0.60  | 0.63  | 0.63  |  | 16.7                                       | 16.1  | 13.9  | 13.8  | 13.5  | 13.0  | 12.7  | 13.2  | 12.9  |  |
| LBR3         | -0.19                                | -0.12 | -0.08 | -0.05 | 0.01  | 0.07  | 0.13  | 0.08  | 0.11  |  | -5.3                                       | -3.2  | -2.1  | -1.2  | 0.3   | 1.7   | 2.9   | 1.8   | 2.4   |  |
| BR1          | 0.96                                 | 1.12  | 1.20  | 1.15  | 1.31  | 1.46  | 1.38  | 1.45  | 1.43  |  | 27.1                                       | 31.3  | 32.9  | 29.5  | 32.5  | 34.6  | 31.2  | 32.2  | 31.2  |  |
| BR2          | -0.36                                | 0.10  | 0.33  | 0.73  | 1.28  | 1.39  | 1.46  | 1.42  | 1.41  |  | -10.9                                      | 2.9   | 9.5   | 20.0  | 33.6  | 34.9  | 35.2  | 33.0  | 32.1  |  |
| BR3          | -0.72                                | -0.70 | -0.69 | -0.64 | -0.54 | -0.38 | -0.25 | -0.10 | 0.05  |  | -20.7                                      | -19.9 | -19.3 | -17.6 | -14.4 | -9.8  | -6.2  | -2.6  | 1.2   |  |
| SCh1         | -0.02                                | 0.05  | 0.07  | 0.12  | 0.12  | 0.07  | 0.05  | 0.04  | 0.06  |  | -0.5                                       | 1.3   | 2.0   | 3.3   | 3.1   | 1.7   | 1.3   | 1.0   | 1.4   |  |
| SCh2         | 0.14                                 | 0.12  | 0.11  | 0.14  | 0.14  | 0.14  | 0.11  | 0.12  | 0.11  |  | 3.6                                        | 3.0   | 2.8   | 3.2   | 3.2   | 3.0   | 2.4   | 2.5   | 2.3   |  |
| SR           | 0.00                                 | 0.00  | 0.00  | -0.01 | -0.01 | 0.00  | -0.01 | 0.00  | -0.01 |  | 0.0                                        | -0.1  | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR         | 0.35                                 | 0.43  | 0.44  | 0.43  | 0.52  | 0.55  | 0.61  | 0.59  | 0.65  |  | 7.4                                        | 8.7   | 8.7   | 7.9   | 8.9   | 9.0   | 9.6   | 9.2   | 9.9   |  |



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## **44 ft Channel Depth**

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
Scenario: WASP-1997-2ftonly

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.95                   | 4.02 | 4.06 | 4.2  | 4.36 | 4.49 | 4.59 | 4.66 | 4.74 |
| FR2  | 3.64                   | 3.76 | 3.84 | 4.01 | 4.17 | 4.36 | 4.54 | 4.6  | 4.69 |
| FR3  | 3.5                    | 3.58 | 3.63 | 3.84 | 3.98 | 4.18 | 4.64 | 4.93 | 5.51 |
| FR4  | 3.49                   | 3.57 | 3.64 | 3.86 | 4.02 | 4.23 | 4.75 | 4.98 | 5.52 |
| FR5  | 3.66                   | 3.76 | 3.88 | 4.03 | 4.26 | 4.61 | 5.21 | 5.44 | 5.64 |
| FR6  | 3.7                    | 3.77 | 3.88 | 4.04 | 4.17 | 4.5  | 5.26 | 5.53 | 5.7  |
| FR7  | 4.1                    | 4.19 | 4.26 | 4.47 | 4.76 | 5.64 | 6.12 | 6.31 | 6.44 |
| FR8  | 4.53                   | 4.64 | 4.81 | 5.22 | 6.02 | 6.38 | 6.61 | 6.75 | 7.05 |
| FR9  | 4.73                   | 4.84 | 5.1  | 5.44 | 6.09 | 6.53 | 6.8  | 6.9  | 7.11 |
| FR10 | 4.34                   | 4.78 | 4.96 | 5.32 | 5.91 | 6.43 | 6.69 | 7.02 | 7.22 |
| FR11 | 4.18                   | 4.68 | 4.93 | 5.26 | 5.66 | 6.14 | 6.5  | 6.66 | 7.15 |
| MR1  | 4.34                   | 4.42 | 4.55 | 4.76 | 5.04 | 5.4  | 5.71 | 5.85 | 6.18 |
| MR2  | 4                      | 4.13 | 4.28 | 4.59 | 5.01 | 5.41 | 5.68 | 5.8  | 5.97 |
| MR3  | 3.75                   | 3.89 | 3.98 | 4.17 | 4.48 | 4.98 | 5.68 | 5.88 | 6.23 |
| MR4  | 4.03                   | 4.18 | 4.3  | 4.47 | 4.74 | 4.99 | 5.15 | 5.28 | 5.47 |
| MR5  | 1.48                   | 2.04 | 2.43 | 3.07 | 4.92 | 6.23 | 6.57 | 6.9  | 7.11 |
| MR6  | 2.09                   | 2.52 | 3.01 | 3.55 | 5.61 | 6.36 | 6.8  | 7.06 | 7.32 |
| LBR1 | 3.61                   | 4.36 | 4.77 | 5.16 | 5.43 | 5.67 | 5.99 | 6.15 | 6.48 |
| LBR2 | 3.62                   | 3.86 | 3.96 | 4.18 | 4.41 | 4.6  | 4.8  | 4.97 | 5.88 |
| LBR3 | 3.03                   | 3.34 | 3.48 | 3.75 | 4.03 | 4.44 | 4.82 | 5.02 | 5.29 |
| BR1  | 3.28                   | 3.41 | 3.57 | 3.73 | 3.95 | 4.18 | 4.4  | 4.48 | 4.62 |
| BR2  | 2.57                   | 2.81 | 3    | 3.22 | 3.44 | 3.7  | 3.86 | 3.93 | 4.03 |
| BR3  | 3.02                   | 3.27 | 3.45 | 3.61 | 3.78 | 3.93 | 4.06 | 4.13 | 4.27 |
| SCH1 | 2.4                    | 2.55 | 2.72 | 2.85 | 3.02 | 3.4  | 3.74 | 3.89 | 4.09 |
| SCH2 | 3.77                   | 3.89 | 3.99 | 4.1  | 4.3  | 4.43 | 4.56 | 4.62 | 4.76 |
| SR   | 4.69                   | 4.74 | 4.97 | 5.31 | 5.62 | 5.97 | 6.11 | 6.16 | 6.23 |
| StbR | 3.64                   | 4.17 | 4.56 | 5.03 | 5.73 | 6.17 | 6.45 | 6.63 | 6.88 |

Delta D.O. Percentiles for Critical Cells  
Baseline: Scenario: WASP1997Existing  
Project: Scenario: WASP-1997-2ftonly

| Zone | Delta D.O. Percentile |      |       |      |       |      |       |      |       |      |       |      |
|------|-----------------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
|      | 1%                    |      | 5%    |      | 10%   |      | 25%   |      | 50%   |      | 75%   |      |
|      | mg/l                  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    | mg/l  | %    |
| FR1  | 0.03                  | 0.8  | 0.03  | 0.8  | 0.01  | 0.2  | -0.02 | -0.5 | -0.02 | -0.5 | -0.03 | -0.7 |
| FR2  | -0.02                 | -0.5 | 0     | 0.0  | 0     | 0.0  | -0.02 | -0.5 | -0.05 | -1.2 | -0.04 | -0.9 |
| FR3  | 0.01                  | 0.3  | -0.01 | -0.3 | -0.01 | -0.3 | -0.03 | -0.8 | -0.07 | -1.7 | -0.11 | -2.6 |
| FR4  | -0.01                 | -0.3 | 0.01  | 0.3  | 0.02  | 0.6  | -0.06 | -1.5 | -0.05 | -1.2 | -0.17 | -3.9 |
| FR5  | 0.04                  | 1.1  | 0.02  | 0.5  | -0.01 | -0.3 | -0.05 | -1.2 | -0.05 | -1.2 | -0.28 | -5.7 |
| FR6  | 0.01                  | 0.3  | 0.01  | 0.3  | -0.01 | -0.3 | -0.08 | -1.9 | -0.09 | -2.1 | -0.28 | -5.9 |
| FR7  | -0.07                 | -1.7 | -0.06 | -1.4 | -0.07 | -1.6 | -0.14 | -3.0 | -0.27 | -5.4 | -0.34 | -5.7 |
| FR8  | -0.13                 | -2.8 | -0.14 | -2.9 | -0.25 | -4.9 | -0.29 | -5.3 | -0.1  | -1.6 | -0.06 | -0.9 |
| FR9  | -0.15                 | -3.1 | -0.19 | -3.6 | -0.23 | -4.3 | -0.26 | -4.9 | -0.19 | -3.0 | -0.07 | -1.1 |
| FR10 | 0.03                  | 0.7  | 0     | 0.0  | 0.01  | 0.2  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  |
| FR11 | 0.01                  | 0.2  | -0.02 | -0.4 | 0     | 0.0  | 0.02  | 0.4  | -0.01 | -0.2 | 0     | 0.0  |
| MR1  | -0.07                 | -1.6 | -0.11 | -2.4 | -0.07 | -1.5 | -0.13 | -2.7 | -0.12 | -2.3 | -0.19 | -3.4 |
| MR2  | -0.03                 | -0.7 | -0.02 | -0.5 | -0.05 | -1.2 | -0.03 | -0.6 | -0.06 | -1.2 | -0.12 | -2.2 |
| MR3  | 0.05                  | 1.4  | 0     | 0.0  | -0.02 | -0.5 | -0.02 | -0.5 | -0.04 | -0.9 | -0.09 | -1.8 |
| MR4  | 0.14                  | 3.6  | 0.15  | 3.7  | 0.18  | 4.4  | 0.08  | 1.8  | 0.13  | 2.8  | 0.1   | 2.0  |
| MR5  | -0.01                 | -0.7 | 0     | 0.0  | 0.02  | 0.8  | 0.02  | 0.7  | -0.05 | -1.0 | 0     | 0.0  |
| MR6  | -0.02                 | -0.9 | 0.03  | 1.2  | 0     | 0.0  | 0.04  | 1.1  | 0     | 0.0  | 0     | 0.0  |
| LBR1 | 0.04                  | 1.1  | 0.01  | 0.2  | 0.02  | 0.4  | 0.03  | 0.6  | 0     | 0.0  | 0.03  | 0.5  |
| LBR2 | -0.07                 | -1.9 | 0     | 0.0  | -0.01 | -0.3 | 0.02  | 0.5  | 0.02  | 0.5  | 0     | 0.0  |
| LBR3 | 0.14                  | 4.8  | 0.06  | 1.8  | 0.01  | 0.3  | 0.07  | 1.9  | 0.08  | 2.0  | 0.1   | 2.3  |
| BR1  | 0                     | 0.0  | 0     | 0.0  | 0     | 0.0  | -0.01 | -0.3 | -0.02 | -0.5 | -0.02 | -0.5 |
| BR2  | 0.02                  | 0.8  | -0.03 | -1.1 | 0.01  | 0.3  | -0.02 | -0.6 | 0     | 0.0  | 0     | 0.0  |
| BR3  | -0.01                 | -0.3 | 0.01  | 0.3  | 0.01  | 0.3  | -0.01 | -0.3 | 0     | 0.0  | -0.02 | -0.5 |
| SCH1 | 0.01                  | 0.4  | -0.02 | -0.8 | 0.04  | 1.5  | 0.02  | 0.7  | 0.01  | 0.3  | -0.01 | -0.3 |
| SCH2 | 0.03                  | 0.8  | -0.02 | -0.5 | -0.02 | -0.5 | -0.04 | -1.0 | -0.03 | -0.7 | -0.04 | -0.9 |
| SR   | 0                     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  | 0     | 0.0  |
| SibR | -0.2                  | -5.2 | -0.05 | -1.2 | -0.01 | -0.2 | -0.01 | -0.2 | 0.04  | 0.7  | -0.03 | -0.5 |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31  
 Project Scenario: WASP-1997-2ftonly

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.14                                  | 4.22 | 4.27 | 4.36 | 4.48 | 4.57 | 4.68 | 4.76 | 4.84 |
| FR2       | 3.96                                  | 4.01 | 4.04 | 4.23 | 4.35 | 4.50 | 4.60 | 4.64 | 4.70 |
| FR3       | 3.71                                  | 3.77 | 3.85 | 4.00 | 4.15 | 4.32 | 4.59 | 4.67 | 4.74 |
| FR4       | 3.65                                  | 3.71 | 3.75 | 3.93 | 4.06 | 4.22 | 4.73 | 5.05 | 5.26 |
| FR5       | 3.70                                  | 3.77 | 3.86 | 4.03 | 4.17 | 4.52 | 5.13 | 5.43 | 5.61 |
| FR6       | 3.95                                  | 3.98 | 4.06 | 4.24 | 4.39 | 4.88 | 5.56 | 5.76 | 5.89 |
| FR7       | 4.36                                  | 4.45 | 4.57 | 4.84 | 5.63 | 6.08 | 6.32 | 6.45 | 6.59 |
| FR8       | 4.72                                  | 4.88 | 5.04 | 5.42 | 6.00 | 6.36 | 6.60 | 6.71 | 6.89 |
| FR9       | 5.46                                  | 5.74 | 5.90 | 6.16 | 6.48 | 6.75 | 7.02 | 7.19 | 7.32 |
| FR10      | 5.70                                  | 5.85 | 6.01 | 6.30 | 6.56 | 6.81 | 7.17 | 7.22 | 7.32 |
| FR11      | 4.87                                  | 5.10 | 5.27 | 5.59 | 5.89 | 6.18 | 6.45 | 6.56 | 6.68 |
| MR1       | 4.39                                  | 4.49 | 4.60 | 4.80 | 5.05 | 5.41 | 5.64 | 5.80 | 5.91 |
| MR2       | 4.17                                  | 4.31 | 4.47 | 4.71 | 5.04 | 5.38 | 5.66 | 5.77 | 5.89 |
| MR3       | 3.89                                  | 4.03 | 4.11 | 4.37 | 4.70 | 5.15 | 5.53 | 5.64 | 5.77 |
| MR4       | 4.41                                  | 4.52 | 4.62 | 4.79 | 5.06 | 5.25 | 5.44 | 5.57 | 5.71 |
| MR5       | 2.30                                  | 2.56 | 3.00 | 3.49 | 5.30 | 6.16 | 6.53 | 6.83 | 7.02 |
| MR6       | 2.13                                  | 2.55 | 3.09 | 3.60 | 5.71 | 6.33 | 6.80 | 6.94 | 7.28 |
| LBR1      | 4.30                                  | 4.51 | 4.59 | 4.82 | 5.01 | 5.20 | 5.31 | 5.46 | 5.56 |
| LBR2      | 3.70                                  | 3.80 | 3.96 | 4.14 | 4.36 | 4.55 | 4.73 | 4.78 | 4.93 |
| LBR3      | 3.57                                  | 3.63 | 3.69 | 3.82 | 3.99 | 4.15 | 4.30 | 4.41 | 4.49 |
| BR1       | 3.53                                  | 3.58 | 3.64 | 3.88 | 4.02 | 4.18 | 4.39 | 4.46 | 4.55 |
| BR2       | 3.30                                  | 3.38 | 3.45 | 3.61 | 3.80 | 3.96 | 4.12 | 4.27 | 4.36 |
| BR3       | 3.44                                  | 3.50 | 3.54 | 3.62 | 3.74 | 3.87 | 3.96 | 3.99 | 4.01 |
| SCh1      | 3.47                                  | 3.55 | 3.61 | 3.71 | 3.82 | 3.94 | 4.02 | 4.09 | 4.17 |
| SCh2      | 3.97                                  | 4.04 | 4.09 | 4.22 | 4.35 | 4.46 | 4.55 | 4.60 | 4.69 |
| SR        | 4.90                                  | 4.96 | 5.18 | 5.52 | 5.84 | 6.17 | 6.35 | 6.41 | 6.48 |
| StbR      | 4.69                                  | 4.84 | 5.01 | 5.36 | 5.68 | 6.00 | 6.21 | 6.30 | 6.45 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline n:nario: WASP1997Existing

Project n:nario: WASP-1997-2ftonly

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |      | Project - Baseline Relative Difference (%) |      |      |      |      |      |      |      |      |      |
|-----------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------------------------------------------|------|------|------|------|------|------|------|------|------|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   | 99%  | 1%                                         | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  | 99%  |
| FR1       | 0.01                                 | 0.03  | 0.00  | -0.01 | -0.02 | -0.02 | -0.05 | -0.03 | 0.00  | 0.00 | 0.2                                        | 0.6  | 0.1  | -0.2 | -0.3 | -0.4 | -1.0 | -0.7 | -0.1 | -0.1 |
| FR2       | 0.02                                 | 0.01  | 0.01  | -0.02 | -0.03 | -0.04 | -0.05 | -0.04 | -0.06 | 0.05 | 0.3                                        | 0.2  | -0.6 | -0.6 | -0.9 | -1.1 | -0.9 | -1.2 | -0.9 | -1.2 |
| FR3       | 0.01                                 | 0.00  | 0.02  | -0.03 | -0.04 | -0.06 | -0.12 | -0.12 | -0.25 | 0.3  | -0.1                                       | 0.4  | -0.6 | -1.0 | -1.3 | -2.5 | -2.5 | -2.5 | -5.1 | -5.1 |
| FR4       | 0.00                                 | 0.00  | 0.00  | -0.05 | -0.06 | -0.15 | -0.21 | -0.26 | -0.29 | -0.1 | 0.0                                        | 0.1  | -1.3 | -1.5 | -3.4 | -4.2 | -4.9 | -5.2 | -4.9 | -5.2 |
| FR5       | 0.02                                 | 0.01  | -0.02 | -0.05 | -0.10 | -0.25 | -0.28 | -0.21 | -0.18 | 0.5  | 0.2                                        | -0.6 | -1.3 | -2.3 | -5.2 | -5.2 | -3.8 | -3.8 | -3.2 | -3.2 |
| FR6       | -0.01                                | -0.03 | -0.05 | -0.08 | -0.15 | -0.32 | -0.22 | -0.16 | -0.15 | -0.4 | -0.7                                       | -1.2 | -1.9 | -3.3 | -6.2 | -3.7 | -2.7 | -2.7 | -2.5 | -2.5 |
| FR7       | -0.08                                | -0.10 | -0.12 | -0.25 | -0.23 | -0.10 | -0.09 | -0.11 | -0.11 | -1.8 | -2.2                                       | -2.5 | -4.8 | -3.9 | -1.6 | -1.4 | -1.7 | -1.7 | -1.7 | -1.7 |
| FR8       | -0.14                                | -0.18 | -0.24 | -0.24 | -0.15 | -0.07 | -0.08 | -0.09 | -0.09 | -2.8 | -3.5                                       | -4.6 | -4.2 | -2.5 | -1.1 | -1.2 | -1.3 | -1.3 | -1.3 | -1.3 |
| FR9       | -0.21                                | -0.17 | -0.12 | -0.10 | -0.05 | -0.06 | -0.05 | -0.03 | -0.02 | -3.7 | -2.8                                       | -1.9 | -1.7 | -0.8 | -0.9 | -0.7 | -0.5 | -0.2 | -0.2 | -0.2 |
| FR10      | -0.01                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.01  | -0.01 | 0.00  | -0.2 | 0.0                                        | 0.0  | 0.0  | -0.1 | 0.0  | 0.1  | -0.2 | 0.0  | 0.0  | 0.0  |
| FR11      | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | -0.1 | 0.0                                        | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  | 0.1  |
| MR1       | -0.09                                | -0.09 | -0.10 | -0.09 | -0.13 | -0.13 | -0.20 | -0.17 | -0.13 | -2.0 | -2.1                                       | -2.0 | -1.8 | -2.5 | -2.3 | -3.5 | -2.8 | -2.8 | -2.1 | -2.1 |
| MR2       | -0.03                                | 0.00  | -0.04 | -0.08 | -0.09 | -0.12 | -0.14 | -0.14 | -0.14 | -0.6 | 0.0                                        | -1.0 | -1.7 | -1.8 | -2.1 | -2.4 | -2.4 | -2.4 | -2.4 | -2.4 |
| MR3       | 0.03                                 | -0.01 | 0.00  | -0.01 | -0.04 | -0.07 | -0.06 | -0.08 | -0.08 | 0.8  | -0.2                                       | 0.1  | -0.2 | -0.8 | -1.3 | -1.1 | -1.5 | -1.4 | -1.4 | -1.4 |
| MR4       | 0.02                                 | 0.01  | 0.01  | 0.01  | 0.00  | 0.00  | 0.00  | 0.03  | 0.01  | 0.4  | 0.2                                        | 0.0  | 0.7  | -0.7 | -0.1 | 0.1  | 0.0  | 0.5  | 0.2  | 0.2  |
| MR5       | -0.01                                | 0.00  | 0.03  | 0.02  | -0.04 | 0.00  | 0.00  | 0.00  | 0.01  | -0.4 | 0.0                                        | 1.0  | 0.7  | -0.7 | -0.1 | 0.1  | 0.1  | 0.1  | 0.1  | 0.1  |
| MR6       | -0.01                                | 0.01  | 0.04  | 0.02  | 0.02  | 0.00  | 0.00  | -0.01 | 0.01  | -0.6 | 0.5                                        | 1.1  | 0.4  | 0.4  | 0.0  | 0.0  | -0.1 | 0.1  | 0.1  | 0.1  |
| LBR1      | 0.01                                 | 0.01  | 0.00  | 0.02  | 0.02  | 0.01  | 0.01  | 0.02  | 0.00  | 0.2  | 0.2                                        | 0.1  | 0.4  | 0.4  | 0.2  | 0.2  | 0.3  | -0.1 | -0.1 | -0.1 |
| LBR2      | 0.00                                 | -0.01 | 0.00  | 0.01  | 0.01  | 0.00  | 0.02  | 0.01  | 0.03  | 0.0  | -0.2                                       | -0.1 | 0.2  | 0.2  | -0.1 | 0.3  | 0.2  | 0.7  | 0.7  | 0.7  |
| LBR3      | 0.03                                 | 0.05  | 0.04  | 0.03  | 0.04  | 0.04  | 0.06  | 0.06  | 0.03  | 0.9  | 1.5                                        | 1.1  | 0.9  | 1.0  | 1.1  | 1.4  | 1.4  | 0.6  | 0.6  | 0.6  |
| BR1       | 0.00                                 | 0.00  | 0.00  | -0.02 | -0.02 | -0.03 | -0.04 | -0.04 | -0.05 | 0.1  | -0.1                                       | 0.0  | -0.4 | -0.5 | -0.8 | -0.8 | -0.9 | -1.0 | -1.0 | -1.0 |
| BR2       | 0.00                                 | 0.00  | -0.01 | -0.01 | -0.01 | -0.02 | -0.03 | -0.02 | -0.02 | -0.1 | 0.0                                        | -0.3 | -0.2 | -0.4 | -0.6 | -0.6 | -0.5 | -0.5 | -0.5 | -0.5 |
| BR3       | -0.02                                | -0.01 | -0.01 | 0.00  | 0.00  | 0.02  | -0.01 | -0.01 | 0.01  | -0.4 | -0.3                                       | -0.4 | -0.1 | -0.1 | 0.5  | -0.2 | -0.1 | -0.1 | -0.1 | -0.1 |
| SCh1      | -0.04                                | -0.01 | -0.02 | -0.01 | -0.01 | -0.02 | -0.01 | -0.01 | 0.01  | -1.1 | -0.3                                       | -0.4 | -0.3 | -0.2 | -0.4 | -0.3 | -0.2 | -0.2 | -0.2 | -0.2 |
| SCh2      | 0.03                                 | 0.00  | 0.00  | -0.03 | -0.02 | -0.03 | -0.05 | -0.04 | -0.04 | 0.7  | -0.1                                       | 0.1  | -0.7 | -0.5 | -0.7 | -1.2 | -0.9 | -0.9 | -0.9 | -0.9 |
| SR        | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.0  | 0.0                                        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| stbR      | -0.06                                | -0.09 | -0.08 | -0.08 | -0.11 | -0.09 | -0.09 | -0.13 | -0.11 | -1.2 | -1.8                                       | -1.6 | -1.5 | -1.8 | -1.5 | -1.4 | -1.9 | -1.9 | -1.7 | -1.7 |

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# **44 ft Channel Depth**

*Mitigation Plan 6b*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
 Scenario: WASP-1997-Plan6b\_2ft

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |      |
|------|------------------------|------|------|------|------|------|------|------|------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1  | 3.9                    | 3.96 | 4    | 4.19 | 4.34 | 4.52 | 4.61 | 4.67 | 4.73 |
| FR2  | 3.44                   | 4.05 | 4.14 | 4.29 | 4.48 | 4.63 | 4.78 | 4.85 | 4.97 |
| FR3  | 3.58                   | 3.61 | 3.69 | 3.94 | 4.08 | 4.32 | 4.85 | 5.25 | 5.6  |
| FR4  | 3.57                   | 3.62 | 3.68 | 3.95 | 4.1  | 4.34 | 4.83 | 5.22 | 5.53 |
| FR5  | 3.7                    | 3.74 | 3.8  | 4.03 | 4.16 | 4.39 | 5.07 | 5.35 | 5.55 |
| FR6  | 3.75                   | 3.84 | 3.91 | 4.12 | 4.26 | 4.53 | 5.32 | 5.59 | 5.72 |
| FR7  | 4.55                   | 4.65 | 4.8  | 5.06 | 5.61 | 6.11 | 6.38 | 6.53 | 7.03 |
| FR8  | 4.52                   | 4.61 | 4.78 | 5.11 | 5.96 | 6.32 | 6.54 | 6.68 | 6.89 |
| FR9  | 5.16                   | 5.64 | 5.8  | 6.16 | 6.46 | 6.75 | 7.06 | 7.18 | 7.35 |
| FR10 | 4.61                   | 5.01 | 5.14 | 5.48 | 5.86 | 6.26 | 6.58 | 6.77 | 7.13 |
| FR11 | 3.59                   | 4.1  | 4.36 | 4.77 | 5.62 | 6.07 | 6.35 | 6.53 | 6.84 |
| MR1  | 4.31                   | 4.43 | 4.57 | 4.76 | 5.03 | 5.32 | 5.74 | 5.91 | 6.18 |
| MR2  | 4.19                   | 4.32 | 4.4  | 4.64 | 4.94 | 5.32 | 5.69 | 5.81 | 5.94 |
| MR3  | 4.11                   | 4.21 | 4.34 | 4.51 | 4.8  | 5.08 | 5.28 | 5.48 | 5.72 |
| MR4  | 3.84                   | 4.68 | 4.91 | 5.21 | 5.47 | 5.77 | 6.06 | 6.25 | 6.72 |
| MR5  | 1.4                    | 1.56 | 1.82 | 2.55 | 5.01 | 6.11 | 6.45 | 6.72 | 6.98 |
| MR6  | 5.43                   | 5.86 | 6.17 | 6.54 | 6.8  | 7.15 | 7.38 | 7.47 | 7.57 |
| LBR1 | 3.18                   | 4.21 | 4.83 | 5.26 | 5.5  | 5.8  | 6.08 | 6.29 | 6.52 |
| LBR2 | 3.83                   | 4.12 | 4.21 | 4.41 | 4.64 | 4.87 | 5.02 | 5.18 | 5.69 |
| LBR3 | 1.76                   | 1.96 | 2.07 | 2.39 | 2.74 | 3.09 | 3.3  | 3.43 | 3.53 |
| BR1  | 1.07                   | 1.55 | 1.91 | 2.59 | 3.28 | 4.07 | 4.3  | 4.36 | 4.47 |
| BR2  | 0.62                   | 0.89 | 1.16 | 1.83 | 2.38 | 2.68 | 2.97 | 3.11 | 3.28 |
| BR3  | 0.81                   | 1.07 | 1.23 | 1.48 | 1.75 | 2.38 | 3    | 3.18 | 3.38 |
| SCH1 | 2.33                   | 2.51 | 2.68 | 2.85 | 3.05 | 3.3  | 3.66 | 3.82 | 4    |
| SCH2 | 3.74                   | 3.87 | 3.97 | 4.1  | 4.29 | 4.43 | 4.56 | 4.64 | 4.81 |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.62 | 5.96 | 6.1  | 6.15 | 6.22 |
| StbR | 4.07                   | 4.48 | 4.74 | 5.22 | 5.71 | 6.14 | 6.42 | 6.57 | 6.78 |

Delta D.O. Percentiles for Critical Cells  
Baseline: WASP1997Existing  
Project: WASP-1997-Plan6b\_2ft

| Zone | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |
|      | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |
| FR1  | -0.02                 | -0.5  | -0.03 | -0.8  | -0.05 | -1.2  | -0.03 | -0.7  | -0.04 | -0.9  | 0     | 0.0   | -0.02 | -0.4  | -0.03 | -0.6  | -0.01 | -0.2  |
| FR2  | -0.22                 | -6.0  | 0.29  | 7.7   | 0.3   | 7.8   | 0.26  | 6.5   | 0.26  | 6.2   | 0.23  | 5.2   | 0.16  | 3.4   | 0.16  | 3.4   | -0.11 | -2.2  |
| FR3  | 0.09                  | 2.6   | 0.02  | 0.6   | 0.05  | 1.4   | 0.07  | 1.8   | 0.03  | 0.7   | 0.03  | 0.7   | 0.07  | 1.5   | 0.18  | 3.6   | 0     | 0.0   |
| FR4  | 0.07                  | 2.0   | 0.06  | 1.7   | 0.06  | 1.7   | 0.03  | 0.8   | 0.03  | 0.7   | -0.06 | -1.4  | -0.13 | -2.6  | -0.09 | -1.7  | 0.03  | 0.5   |
| FR5  | 0.08                  | 2.2   | 0     | 0.0   | -0.09 | -2.3  | -0.05 | -1.2  | -0.15 | -3.5  | -0.5  | -10.2 | -0.35 | -6.5  | -0.28 | -5.0  | -0.23 | -4.0  |
| FR6  | 0.06                  | 1.6   | 0.08  | 2.1   | 0.02  | 0.5   | 0     | 0.0   | 0     | 0.0   | -0.25 | -5.2  | -0.25 | -4.5  | -0.18 | -3.1  | -0.19 | -3.2  |
| FR7  | 0.38                  | 9.1   | 0.4   | 9.4   | 0.47  | 10.9  | 0.45  | 9.8   | 0.58  | 11.5  | 0.13  | 2.2   | 0.12  | 1.9   | 0.17  | 2.7   | 0.54  | 8.3   |
| FR8  | -0.14                 | -3.0  | -0.17 | -3.6  | -0.28 | -5.5  | -0.4  | -7.3  | -0.16 | -2.6  | -0.12 | -1.9  | -0.18 | -2.7  | -0.17 | -2.5  | -0.22 | -3.1  |
| FR9  | 0.28                  | 5.7   | 0.61  | 12.1  | 0.47  | 8.8   | 0.44  | 7.7   | 0.18  | 2.9   | 0.15  | 2.3   | 0.21  | 3.1   | 0.16  | 2.3   | 0.16  | 2.2   |
| FR10 | 0.3                   | 7.0   | 0.23  | 4.8   | 0.19  | 3.8   | 0.16  | 3.0   | -0.05 | -0.8  | -0.17 | -2.6  | -0.1  | -1.5  | -0.24 | -3.4  | -0.09 | -1.2  |
| FR11 | -0.58                 | -13.9 | -0.6  | -12.8 | -0.57 | -11.6 | -0.47 | -9.0  | -0.05 | -0.9  | -0.07 | -1.1  | -0.15 | -2.3  | -0.11 | -1.7  | -0.29 | -4.1  |
| MR1  | -0.1                  | -2.3  | -0.1  | -2.2  | -0.05 | -1.1  | -0.13 | -2.7  | -0.13 | -2.5  | -0.27 | -4.8  | -0.15 | -2.5  | -0.09 | -1.5  | -0.04 | -0.6  |
| MR2  | 0.16                  | 4.0   | 0.17  | 4.1   | 0.07  | 1.6   | 0.02  | 0.4   | -0.13 | -2.6  | -0.21 | -3.8  | -0.11 | -1.9  | -0.09 | -1.5  | -0.09 | -1.5  |
| MR3  | 0.41                  | 11.1  | 0.32  | 8.2   | 0.34  | 8.5   | 0.32  | 7.6   | 0.28  | 6.2   | 0.01  | 0.2   | -0.43 | -7.5  | -0.45 | -7.6  | -0.47 | -7.6  |
| MR4  | -0.05                 | -1.3  | 0.65  | 16.1  | 0.79  | 19.2  | 0.82  | 18.7  | 0.86  | 18.7  | 0.88  | 18.0  | 1     | 19.8  | 1.07  | 20.7  | 1.31  | 24.2  |
| MR5  | -0.09                 | -6.0  | -0.48 | -23.5 | -0.59 | -24.5 | -0.5  | -16.4 | 0.04  | 0.8   | -0.12 | -1.9  | -0.12 | -1.8  | -0.17 | -2.5  | -0.13 | -1.8  |
| MR6  | 3.32                  | 157.3 | 3.37  | 135.3 | 3.16  | 105.0 | 3.03  | 86.3  | 1.19  | 21.2  | 0.79  | 12.4  | 0.58  | 8.5   | 0.41  | 5.8   | 0.25  | 3.4   |
| LBR1 | -0.39                 | -10.9 | -0.14 | -3.2  | 0.08  | 1.7   | 0.13  | 2.5   | 0.07  | 1.3   | 0.16  | 2.8   | 0.11  | 1.8   | 0.13  | 2.1   | 0.05  | 0.8   |
| LBR2 | 0.14                  | 3.8   | 0.26  | 6.7   | 0.24  | 6.0   | 0.25  | 6.0   | 0.25  | 5.7   | 0.27  | 5.9   | 0.25  | 5.2   | 0.3   | 6.1   | 0.43  | 8.2   |
| LBR3 | -1.13                 | -39.1 | -1.32 | -40.2 | -1.4  | -40.3 | -1.29 | -35.1 | -1.21 | -30.6 | -1.25 | -28.8 | -1.43 | -30.2 | -1.56 | -31.3 | -1.71 | -32.6 |
| BR1  | -2.21                 | -67.4 | -1.86 | -54.5 | -1.66 | -46.5 | -1.15 | -30.7 | -0.69 | -17.4 | -0.13 | -3.1  | -0.13 | -2.9  | -0.17 | -3.8  | -0.17 | -3.7  |
| BR2  | -1.93                 | -75.7 | -1.95 | -68.7 | -1.83 | -61.2 | -1.41 | -43.5 | -1.06 | -30.8 | -1.02 | -27.6 | -0.87 | -22.7 | -0.82 | -20.9 | -0.75 | -18.6 |
| BR3  | -2.22                 | -73.3 | -2.19 | -67.2 | -2.21 | -64.2 | -1.54 | -39.7 | -1.03 | -30.7 | -1.57 | -39.7 | -1.08 | -26.5 | -0.97 | -23.4 | -0.87 | -20.5 |
| SCH1 | -0.06                 | -2.5  | -0.06 | -2.3  | 0     | 0.0   | 0.02  | 0.7   | 0.04  | 1.3   | -0.11 | -3.2  | -0.11 | -2.9  | -0.07 | -1.8  | -0.14 | -3.4  |
| SCH2 | 0                     | 0.0   | -0.04 | -1.0  | -0.04 | -1.0  | -0.04 | -1.0  | -0.04 | -0.9  | -0.04 | -0.9  | -0.04 | -0.9  | -0.04 | -0.9  | -0.01 | -0.2  |
| SR   | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | 0     | 0.0   | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |
| SibR | 0.23                  | 6.0   | 0.26  | 6.2   | 0.17  | 3.7   | 0.18  | 3.6   | 0.02  | 0.4   | -0.06 | -1.0  | -0.07 | -1.1  | -0.07 | -1.1  | -0.06 | -0.9  |



### D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Project Scenario: WASP-1997-Plan6b\_2ft

| Zone Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|-----------|---------------------------------------|------|------|------|------|------|------|------|------|
|           | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1       | 4.12                                  | 4.19 | 4.26 | 4.36 | 4.49 | 4.58 | 4.67 | 4.73 | 4.80 |
| FR2       | 3.95                                  | 3.98 | 4.02 | 4.25 | 4.38 | 4.54 | 4.66 | 4.69 | 4.78 |
| FR3       | 3.75                                  | 3.81 | 3.88 | 4.09 | 4.22 | 4.39 | 4.66 | 4.75 | 4.87 |
| FR4       | 3.71                                  | 3.74 | 3.78 | 4.04 | 4.14 | 4.31 | 4.82 | 5.12 | 5.36 |
| FR5       | 3.77                                  | 3.80 | 3.91 | 4.12 | 4.26 | 4.52 | 5.21 | 5.52 | 5.67 |
| FR6       | 3.95                                  | 3.99 | 4.05 | 4.28 | 4.42 | 4.86 | 5.60 | 5.79 | 5.94 |
| FR7       | 4.36                                  | 4.45 | 4.56 | 4.82 | 5.53 | 6.04 | 6.28 | 6.38 | 6.47 |
| FR8       | 4.71                                  | 4.85 | 4.99 | 5.35 | 5.95 | 6.32 | 6.53 | 6.63 | 6.81 |
| FR9       | 5.39                                  | 5.66 | 5.81 | 6.11 | 6.45 | 6.72 | 6.97 | 7.15 | 7.27 |
| FR10      | 5.44                                  | 5.73 | 5.87 | 6.14 | 6.48 | 6.71 | 7.08 | 7.18 | 7.29 |
| FR11      | 4.50                                  | 4.72 | 4.87 | 5.15 | 5.46 | 5.72 | 5.97 | 6.09 | 6.24 |
| MR1       | 4.39                                  | 4.49 | 4.59 | 4.79 | 5.02 | 5.34 | 5.67 | 5.84 | 5.93 |
| MR2       | 4.24                                  | 4.38 | 4.49 | 4.72 | 4.99 | 5.29 | 5.61 | 5.80 | 5.93 |
| MR3       | 4.19                                  | 4.29 | 4.42 | 4.59 | 4.85 | 5.08 | 5.23 | 5.33 | 5.52 |
| MR4       | 4.54                                  | 4.66 | 4.77 | 4.95 | 5.22 | 5.45 | 5.65 | 5.84 | 6.02 |
| MR5       | 1.82                                  | 2.16 | 2.76 | 3.25 | 5.40 | 6.11 | 6.44 | 6.67 | 6.89 |
| MR6       | 5.43                                  | 5.74 | 5.93 | 6.17 | 6.37 | 6.62 | 6.81 | 6.91 | 7.01 |
| LBR1      | 4.34                                  | 4.58 | 4.71 | 4.93 | 5.15 | 5.36 | 5.57 | 5.70 | 5.77 |
| LBR2      | 3.97                                  | 4.09 | 4.20 | 4.39 | 4.63 | 4.83 | 4.96 | 5.09 | 5.21 |
| LBR3      | 2.79                                  | 2.90 | 3.03 | 3.25 | 3.46 | 3.78 | 3.97 | 4.06 | 4.13 |
| BR1       | 2.02                                  | 2.82 | 3.35 | 3.93 | 4.25 | 4.50 | 4.67 | 4.72 | 4.85 |
| BR2       | 1.01                                  | 1.28 | 1.54 | 2.14 | 2.83 | 3.46 | 3.86 | 4.01 | 4.22 |
| BR3       | 1.41                                  | 1.60 | 1.72 | 1.89 | 2.03 | 2.19 | 2.34 | 2.38 | 2.49 |
| SCh1      | 3.43                                  | 3.55 | 3.61 | 3.72 | 3.81 | 3.93 | 4.00 | 4.07 | 4.16 |
| SCh2      | 3.93                                  | 4.02 | 4.08 | 4.23 | 4.36 | 4.48 | 4.57 | 4.63 | 4.72 |
| SR        | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.40 | 6.47 |
| StbR      | 4.85                                  | 4.97 | 5.13 | 5.41 | 5.74 | 5.99 | 6.16 | 6.25 | 6.40 |

Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline nario: WASP1997Existing

Project ario: WASP-1997-Plan6b\_2ft

| Zone<br>Name | Project - Baseline Difference (mg/l) |       |       |       |       |       |       |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |       |       |       |       |       |  |
|--------------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|--------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|              | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%   | 75%   | 90%   | 95%   | 99%   |  |
| FR1          | -0.01                                | 0.00  | -0.01 | -0.02 | -0.01 | -0.01 | -0.05 | -0.07 | -0.04 |  | -0.2                                       | -0.1  | -0.1  | -0.3  | -0.2  | -0.3  | -1.1  | -1.5  | -0.8  |  |
| FR2          | 0.01                                 | -0.01 | -0.01 | 0.00  | 0.01  | 0.00  | 0.01  | 0.01  | 0.02  |  | 0.2                                        | -0.3  | -0.3  | -0.1  | 0.2   | 0.0   | 0.2   | 0.1   | 0.5   |  |
| FR3          | 0.05                                 | 0.04  | 0.04  | 0.06  | 0.03  | 0.00  | -0.05 | -0.03 | -0.12 |  | 1.4                                        | 1.2   | 1.1   | 1.5   | 0.8   | 0.1   | -1.0  | -0.6  | -2.4  |  |
| FR4          | 0.05                                 | 0.04  | 0.03  | 0.05  | 0.02  | -0.06 | -0.11 | -0.18 | -0.19 |  | 1.4                                        | 1.1   | 0.9   | 1.3   | 0.5   | -1.4  | -2.3  | -3.4  | -3.4  |  |
| FR5          | 0.09                                 | 0.04  | 0.03  | 0.04  | -0.02 | -0.24 | -0.20 | -0.13 | -0.13 |  | 2.5                                        | 1.1   | 0.7   | 0.9   | -0.4  | -5.1  | -3.7  | -2.3  | -2.2  |  |
| FR6          | -0.01                                | -0.03 | -0.06 | -0.04 | -0.12 | -0.34 | -0.18 | -0.13 | -0.10 |  | -0.3                                       | -0.7  | -1.4  | -0.9  | -2.7  | -6.5  | -3.1  | -2.2  | -1.7  |  |
| FR7          | -0.08                                | -0.10 | -0.13 | -0.27 | -0.33 | -0.15 | -0.14 | -0.18 | -0.23 |  | -1.8                                       | -2.2  | -2.7  | -5.2  | -5.6  | -2.3  | -2.1  | -2.7  | -3.4  |  |
| FR8          | -0.16                                | -0.20 | -0.30 | -0.31 | -0.20 | -0.11 | -0.15 | -0.17 | -0.17 |  | -3.2                                       | -4.0  | -5.6  | -5.5  | -3.3  | -1.7  | -2.2  | -2.6  | -2.4  |  |
| FR9          | -0.28                                | -0.24 | -0.20 | -0.15 | -0.09 | -0.09 | -0.10 | -0.10 | -0.07 |  | -4.9                                       | -4.1  | -3.4  | -2.4  | -1.3  | -1.3  | -1.4  | -1.0  | -0.9  |  |
| FR10         | -0.27                                | -0.12 | -0.14 | -0.16 | -0.09 | -0.10 | -0.08 | -0.06 | -0.03 |  | -4.7                                       | -2.0  | -2.4  | -2.5  | -1.4  | -1.4  | -1.1  | -0.8  | -0.4  |  |
| FR11         | -0.38                                | -0.38 | -0.40 | -0.44 | -0.42 | -0.46 | -0.48 | -0.46 | -0.44 |  | -7.8                                       | -7.5  | -7.6  | -7.8  | -7.1  | -7.4  | -7.5  | -7.0  | -6.6  |  |
| MR1          | -0.09                                | -0.09 | -0.11 | -0.10 | -0.16 | -0.20 | -0.17 | -0.13 | -0.11 |  | -2.0                                       | -2.0  | -2.3  | -2.0  | -3.1  | -3.6  | -2.9  | -2.2  | -1.8  |  |
| MR2          | 0.05                                 | 0.07  | -0.02 | -0.07 | -0.14 | -0.20 | -0.19 | -0.10 | -0.10 |  | 1.1                                        | 1.5   | -0.5  | -1.5  | -2.6  | -3.7  | -3.3  | -1.7  | -1.7  |  |
| MR3          | 0.34                                 | 0.26  | 0.31  | 0.21  | 0.11  | -0.14 | -0.36 | -0.40 | -0.33 |  | 8.8                                        | 6.3   | 7.6   | 4.7   | 2.3   | -2.7  | -6.4  | -7.0  | -5.7  |  |
| MR4          | 0.15                                 | 0.15  | 0.16  | 0.17  | 0.17  | 0.20  | 0.21  | 0.30  | 0.32  |  | 3.4                                        | 3.3   | 3.4   | 3.5   | 3.3   | 3.9   | 3.8   | 5.4   | 5.6   |  |
| MR5          | -0.49                                | -0.40 | -0.21 | 0.07  | -0.05 | -0.09 | -0.15 | -0.12 | -0.12 |  | -21.3                                      | -15.6 | -6.9  | -6.0  | 1.3   | -0.9  | -1.3  | -2.3  | -1.6  |  |
| MR6          | 3.29                                 | 3.20  | 2.88  | 2.59  | 0.68  | 0.29  | 0.01  | -0.03 | -0.27 |  | 153.2                                      | 126.5 | 94.1  | 72.2  | 11.9  | 4.6   | 0.2   | -0.5  | -3.6  |  |
| LBR1         | 0.05                                 | 0.08  | 0.12  | 0.13  | 0.16  | 0.16  | 0.28  | 0.25  | 0.20  |  | 1.1                                        | 1.8   | 2.6   | 2.8   | 3.1   | 3.2   | 5.2   | 4.5   | 3.6   |  |
| LBR2         | 0.26                                 | 0.28  | 0.25  | 0.26  | 0.27  | 0.28  | 0.25  | 0.32  | 0.32  |  | 7.5                                        | 7.4   | 6.2   | 6.3   | 6.3   | 6.1   | 5.3   | 6.7   | 6.5   |  |
| LBR3         | -0.75                                | -0.68 | -0.63 | -0.53 | -0.49 | -0.33 | -0.27 | -0.29 | -0.33 |  | -21.2                                      | -19.1 | -17.2 | -14.1 | -12.3 | -8.1  | -6.3  | -6.7  | -7.4  |  |
| BR1          | -1.51                                | -0.76 | -0.29 | 0.03  | 0.21  | 0.29  | 0.24  | 0.22  | 0.25  |  | -42.7                                      | -21.2 | -8.0  | 0.7   | 5.3   | 6.8   | 5.5   | 4.8   | 5.4   |  |
| BR2          | -2.29                                | -2.10 | -1.92 | -1.48 | -0.99 | -0.53 | -0.29 | -0.28 | -0.17 |  | -69.3                                      | -62.2 | -55.4 | -40.8 | -25.9 | -13.3 | -6.9  | -6.6  | -3.9  |  |
| BR3          | -2.05                                | -1.91 | -1.84 | -1.73 | -1.71 | -1.66 | -1.63 | -1.61 | -1.53 |  | -59.3                                      | -54.3 | -51.7 | -47.8 | -45.8 | -43.1 | -41.0 | -40.4 | -38.0 |  |
| SCh1         | -0.07                                | -0.01 | -0.02 | 0.00  | -0.01 | -0.03 | -0.03 | -0.03 | -0.01 |  | -2.1                                       | -0.2  | -0.6  | 0.0   | -0.4  | -0.7  | -0.8  | -0.7  | -0.2  |  |
| SCh2         | -0.01                                | -0.02 | -0.01 | -0.02 | -0.02 | -0.01 | -0.04 | -0.02 | -0.01 |  | -0.3                                       | -0.5  | -0.2  | -0.6  | -0.4  | -0.2  | -0.8  | -0.4  | -0.2  |  |
| SR           | 0.00                                 | 0.00  | 0.00  | 0.00  | -0.01 | 0.00  | -0.01 | 0.00  | -0.01 |  | 0.0                                        | 0.0   | 0.0   | -0.1  | -0.1  | 0.0   | -0.1  | 0.0   | -0.1  |  |
| StbR         | 0.11                                 | 0.04  | 0.04  | -0.03 | -0.05 | -0.10 | -0.14 | -0.18 | -0.15 |  | 2.3                                        | 0.8   | 0.8   | -0.5  | -0.9  | -1.7  | -2.3  | -2.8  | -2.3  |  |

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# **44 ft Channel Depth**

*Mitigation Plan 6b*

*D.O. Mitigation*

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**Dissolved Oxygen Percentiles Distribution in Critical Cells**  
**Scenario: 6B2ft-withDOmitigation**

| Zone | D.O. Percentile (mg/l) |      |      |      |      |      |      |      |       |
|------|------------------------|------|------|------|------|------|------|------|-------|
|      | 1%                     | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%   |
| FR1  | 3.99                   | 4.06 | 4.12 | 4.33 | 4.48 | 4.64 | 4.76 | 4.78 | 4.86  |
| FR2  | 3.89                   | 3.99 | 4.09 | 4.34 | 4.55 | 4.74 | 5.1  | 5.2  | 5.44  |
| FR3  | 3.77                   | 3.82 | 3.9  | 4.2  | 4.41 | 4.76 | 5.37 | 5.8  | 6.1   |
| FR4  | 3.76                   | 3.82 | 3.93 | 4.23 | 4.45 | 4.89 | 5.39 | 5.82 | 6.13  |
| FR5  | 3.89                   | 3.95 | 4.03 | 4.31 | 4.5  | 4.84 | 5.62 | 5.89 | 6.09  |
| FR6  | 3.96                   | 4.07 | 4.16 | 4.43 | 4.61 | 4.97 | 5.86 | 6.11 | 6.24  |
| FR7  | 4.35                   | 4.47 | 4.55 | 4.82 | 5.12 | 6.14 | 6.63 | 6.81 | 6.93  |
| FR8  | 4.86                   | 4.99 | 5.18 | 5.57 | 6.59 | 7.24 | 7.59 | 7.73 | 8.07  |
| FR9  | 6.2                    | 6.46 | 6.63 | 6.86 | 7.09 | 7.47 | 7.74 | 8.05 | 8.45  |
| FR10 | 5.74                   | 5.93 | 6.15 | 6.46 | 6.77 | 7.26 | 7.99 | 8.75 | 9.47  |
| FR11 | 4.84                   | 4.97 | 5.19 | 5.52 | 5.88 | 6.31 | 8.02 | 9.4  | 10.77 |
| MR1  | 4.61                   | 4.78 | 4.95 | 5.17 | 5.45 | 5.78 | 6.28 | 6.43 | 6.65  |
| MR2  | 4.61                   | 4.73 | 4.82 | 5.07 | 5.4  | 5.75 | 6.11 | 6.32 | 6.44  |
| MR3  | 4.52                   | 4.62 | 4.72 | 4.93 | 5.25 | 5.53 | 5.77 | 5.93 | 6.15  |
| MR4  | 4.43                   | 5.14 | 5.32 | 5.59 | 5.87 | 6.26 | 6.68 | 6.95 | 7.41  |
| MR5  | 2.05                   | 2.21 | 2.49 | 3.18 | 5.91 | 6.84 | 7.35 | 7.66 | 8.13  |
| MR6  | 5.65                   | 6.02 | 6.2  | 6.51 | 6.81 | 7.08 | 7.34 | 7.49 | 7.65  |
| LBR1 | 3.76                   | 4.74 | 5.36 | 5.7  | 5.97 | 6.36 | 6.77 | 7.14 | 7.48  |
| LBR2 | 4.2                    | 4.52 | 4.64 | 4.82 | 5.03 | 5.27 | 5.46 | 5.61 | 6.2   |
| LBR3 | 2.28                   | 2.41 | 2.5  | 2.74 | 3.05 | 3.41 | 3.64 | 3.78 | 3.88  |
| BR1  | 4.2                    | 4.43 | 4.57 | 4.78 | 5.11 | 5.53 | 6.13 | 6.29 | 6.62  |
| BR2  | 2.49                   | 2.88 | 3.32 | 4.07 | 5.9  | 6.9  | 7.51 | 7.7  | 7.91  |
| BR3  | 2.18                   | 2.34 | 2.41 | 2.53 | 2.8  | 3.62 | 4.31 | 4.67 | 5.36  |
| SCH1 | 2.49                   | 2.66 | 2.84 | 3.01 | 3.18 | 3.43 | 3.74 | 3.93 | 4.07  |
| SCH2 | 3.93                   | 4.08 | 4.19 | 4.32 | 4.5  | 4.66 | 4.78 | 4.84 | 5.01  |
| SR   | 4.68                   | 4.73 | 4.96 | 5.3  | 5.62 | 5.96 | 6.1  | 6.15 | 6.22  |
| StbR | 4.52                   | 5.06 | 5.36 | 5.89 | 6.46 | 6.93 | 7.31 | 7.45 | 7.7   |

Delta D.O. Percentiles for Critical Cells  
Baseline: WASP1997Existing  
Project: Scenario: 6B2ft-withDiligation

| Zonte | Delta D.O. Percentile |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |  |
|-------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
|       | 1%                    |       | 5%    |       | 10%   |       | 25%   |       | 50%   |       | 75%   |       | 90%   |       | 95%   |       | 99    |       |  |  |
|       | mg/l                  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     | mg/l  | %     |  |  |
| FR1   | 0.07                  | 1.8   | 0.07  | 1.8   | 0.07  | 1.7   | 0.11  | 2.6   | 0.1   | 2.3   | 0.12  | 2.7   | 0.13  | 2.8   | 0.08  | 1.7   | 0.12  | 2.5   |  |  |
| FR2   | 0.23                  | 6.3   | 0.23  | 6.1   | 0.25  | 6.5   | 0.31  | 7.7   | 0.33  | 7.8   | 0.34  | 7.7   | 0.48  | 10.4  | 0.51  | 10.9  | 0.36  | 7.1   |  |  |
| FR3   | 0.28                  | 8.0   | 0.23  | 6.4   | 0.26  | 7.1   | 0.33  | 8.5   | 0.36  | 8.9   | 0.47  | 11.0  | 0.59  | 12.3  | 0.73  | 14.4  | 0.5   | 8.9   |  |  |
| FR4   | 0.26                  | 7.4   | 0.26  | 7.3   | 0.31  | 8.6   | 0.31  | 7.9   | 0.38  | 9.3   | 0.49  | 11.1  | 0.43  | 8.7   | 0.51  | 9.6   | 0.63  | 11.5  |  |  |
| FR5   | 0.27                  | 7.5   | 0.21  | 5.6   | 0.14  | 3.6   | 0.23  | 5.6   | 0.19  | 4.4   | -0.05 | -1.0  | 0.2   | 3.7   | 0.26  | 4.6   | 0.31  | 5.4   |  |  |
| FR6   | 0.27                  | 7.3   | 0.31  | 8.2   | 0.27  | 6.9   | 0.31  | 7.5   | 0.35  | 8.2   | 0.19  | 4.0   | 0.29  | 5.2   | 0.34  | 5.9   | 0.33  | 5.6   |  |  |
| FR7   | 0.18                  | 4.3   | 0.22  | 5.2   | 0.22  | 5.1   | 0.21  | 4.6   | 0.09  | 1.8   | 0.16  | 2.7   | 0.37  | 5.9   | 0.45  | 7.1   | 0.44  | 6.8   |  |  |
| FR8   | 0.2                   | 4.3   | 0.21  | 4.4   | 0.12  | 2.4   | 0.06  | 1.1   | 0.47  | 7.7   | 0.8   | 12.4  | 0.87  | 12.9  | 0.88  | 12.8  | 0.96  | 13.5  |  |  |
| FR9   | 1.32                  | 27.0  | 1.43  | 28.4  | 1.3   | 24.4  | 1.14  | 19.9  | 0.81  | 12.9  | 0.87  | 13.2  | 0.89  | 13.0  | 1.03  | 14.7  | 1.26  | 17.5  |  |  |
| FR10  | 1.43                  | 33.2  | 1.15  | 24.1  | 1.2   | 24.2  | 1.14  | 21.4  | 0.86  | 14.6  | 0.83  | 12.9  | 1.31  | 19.6  | 1.74  | 24.8  | 2.25  | 31.2  |  |  |
| FR11  | 0.67                  | 16.1  | 0.27  | 5.7   | 0.26  | 5.3   | 0.28  | 5.3   | 0.21  | 3.7   | 0.17  | 2.8   | 1.52  | 23.4  | 2.76  | 41.6  | 3.64  | 51.1  |  |  |
| MR1   | 0.2                   | 4.5   | 0.25  | 5.5   | 0.33  | 7.1   | 0.28  | 5.7   | 0.29  | 5.6   | 0.19  | 3.4   | 0.39  | 6.6   | 0.43  | 7.2   | 0.43  | 6.9   |  |  |
| MR2   | 0.58                  | 14.4  | 0.58  | 14.0  | 0.49  | 11.3  | 0.45  | 9.7   | 0.33  | 6.5   | 0.22  | 4.0   | 0.31  | 5.3   | 0.42  | 7.1   | 0.41  | 6.8   |  |  |
| MR3   | 0.82                  | 22.2  | 0.73  | 18.8  | 0.72  | 18.0  | 0.74  | 17.7  | 0.73  | 16.2  | 0.46  | 9.1   | 0.06  | 1.1   | 0     | 0.0   | -0.04 | -0.6  |  |  |
| MR4   | 0.54                  | 13.9  | 1.11  | 27.5  | 1.2   | 29.1  | 1.2   | 27.3  | 1.26  | 27.3  | 1.37  | 28.0  | 1.62  | 32.0  | 1.77  | 34.2  | 2     | 37.0  |  |  |
| MR5   | 0.56                  | 37.6  | 0.17  | 8.3   | 0.08  | 3.3   | 0.13  | 4.3   | 0.94  | 18.9  | 0.61  | 9.8   | 0.78  | 11.9  | 0.77  | 11.2  | 1.02  | 14.3  |  |  |
| MR6   | 3.54                  | 167.8 | 3.53  | 141.8 | 3.19  | 106.0 | 3     | 85.5  | 1.2   | 21.4  | 0.72  | 11.3  | 0.54  | 7.9   | 0.43  | 6.1   | 0.33  | 4.5   |  |  |
| LBR1  | 0.19                  | 5.3   | 0.39  | 9.0   | 0.61  | 12.8  | 0.57  | 11.1  | 0.54  | 9.9   | 0.72  | 12.8  | 0.8   | 13.4  | 0.98  | 15.9  | 1.01  | 15.6  |  |  |
| LBR2  | 0.51                  | 13.8  | 0.66  | 17.1  | 0.67  | 16.9  | 0.66  | 15.9  | 0.64  | 14.6  | 0.67  | 14.6  | 0.69  | 14.5  | 0.73  | 15.0  | 0.94  | 17.9  |  |  |
| LBR3  | -0.61                 | -21.1 | -0.87 | -26.5 | -0.97 | -28.0 | -0.94 | -25.5 | -0.9  | -22.8 | -0.93 | -21.4 | -1.09 | -23.0 | -1.21 | -24.2 | -1.36 | -26.0 |  |  |
| BR1   | 0.92                  | 28.0  | 1.02  | 29.9  | 1     | 28.0  | 1.04  | 27.8  | 1.14  | 28.7  | 1.33  | 31.7  | 1.7   | 38.4  | 1.76  | 38.9  | 1.98  | 42.7  |  |  |
| BR2   | -0.06                 | -2.4  | 0.04  | 1.4   | 0.33  | 11.0  | 0.83  | 25.6  | 2.46  | 71.5  | 3.2   | 86.5  | 3.67  | 95.6  | 3.77  | 95.9  | 3.88  | 96.3  |  |  |
| BR3   | -0.85                 | -28.1 | -0.92 | -28.2 | -1.03 | -29.9 | -1.09 | -30.1 | -0.98 | -25.9 | -0.33 | -8.4  | 0.23  | 5.6   | 0.52  | 12.5  | 1.11  | 26.1  |  |  |
| SCH1  | 0.1                   | 4.2   | 0.09  | 3.5   | 0.16  | 6.0   | 0.18  | 6.4   | 0.17  | 5.6   | 0.02  | 0.6   | -0.03 | -0.8  | 0.04  | 1.0   | -0.07 | -1.7  |  |  |
| SCH2  | 0.19                  | 5.1   | 0.17  | 4.3   | 0.18  | 4.5   | 0.18  | 4.3   | 0.17  | 3.9   | 0.19  | 4.3   | 0.18  | 3.9   | 0.16  | 3.4   | 0.19  | 3.9   |  |  |
| SR    | -0.01                 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | 0     | 0.0   | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  | -0.01 | -0.2  |  |  |
| StBR  | 0.68                  | 17.7  | 0.84  | 19.9  | 0.79  | 17.3  | 0.85  | 16.9  | 0.77  | 13.5  | 0.73  | 11.8  | 0.82  | 12.6  | 0.81  | 12.2  | 0.86  | 12.6  |  |  |

### D.O. %-tiles for zones of Savannah Estuary

Simulation Period:      Year 1997      AUGUST 1 -AUGUST 31  
 Project:enario: 6B2ft-withDOmitigation

| Zone<br>Name | D.O. Concentration Percentiles (mg/l) |      |      |      |      |      |      |      |      |
|--------------|---------------------------------------|------|------|------|------|------|------|------|------|
|              | 1%                                    | 5%   | 10%  | 25%  | 50%  | 75%  | 90%  | 95%  | 99%  |
| FR1          | 4.16                                  | 4.23 | 4.29 | 4.42 | 4.55 | 4.65 | 4.73 | 4.77 | 4.83 |
| FR2          | 4.08                                  | 4.11 | 4.15 | 4.42 | 4.60 | 4.79 | 4.98 | 5.09 | 5.26 |
| FR3          | 3.93                                  | 4.00 | 4.06 | 4.35 | 4.53 | 4.72 | 5.23 | 5.28 | 5.40 |
| FR4          | 3.91                                  | 3.95 | 4.00 | 4.31 | 4.48 | 4.71 | 5.39 | 5.68 | 5.90 |
| FR5          | 3.98                                  | 4.03 | 4.17 | 4.42 | 4.60 | 4.99 | 5.75 | 6.04 | 6.19 |
| FR6          | 4.19                                  | 4.24 | 4.33 | 4.61 | 4.82 | 5.34 | 6.12 | 6.34 | 6.46 |
| FR7          | 4.66                                  | 4.78 | 4.94 | 5.23 | 6.02 | 6.56 | 6.89 | 6.96 | 7.05 |
| FR8          | 5.10                                  | 5.24 | 5.41 | 5.82 | 6.63 | 7.17 | 7.46 | 7.63 | 7.82 |
| FR9          | 6.29                                  | 6.47 | 6.64 | 6.85 | 7.15 | 7.39 | 7.69 | 7.82 | 7.97 |
| FR10         | 5.94                                  | 6.19 | 6.35 | 6.61 | 6.89 | 7.27 | 7.58 | 7.77 | 8.16 |
| FR11         | 5.65                                  | 5.93 | 6.11 | 6.41 | 6.94 | 7.52 | 8.01 | 8.36 | 8.79 |
| MR1          | 4.71                                  | 4.88 | 5.01 | 5.22 | 5.46 | 5.79 | 6.19 | 6.35 | 6.45 |
| MR2          | 4.68                                  | 4.80 | 4.89 | 5.15 | 5.42 | 5.74 | 6.09 | 6.30 | 6.42 |
| MR3          | 4.62                                  | 4.70 | 4.84 | 5.02 | 5.29 | 5.54 | 5.70 | 5.78 | 5.96 |
| MR4          | 5.02                                  | 5.14 | 5.24 | 5.42 | 5.73 | 5.95 | 6.19 | 6.33 | 6.50 |
| MR5          | 2.45                                  | 2.83 | 3.38 | 3.83 | 6.29 | 7.19 | 8.16 | 8.79 | 9.41 |
| MR6          | 5.66                                  | 5.88 | 5.99 | 6.20 | 6.42 | 6.62 | 6.83 | 6.97 | 7.07 |
| LBR1         | 4.84                                  | 5.08 | 5.18 | 5.39 | 5.57 | 5.78 | 6.03 | 6.14 | 6.22 |
| LBR2         | 4.40                                  | 4.50 | 4.63 | 4.79 | 5.03 | 5.22 | 5.39 | 5.52 | 5.65 |
| LBR3         | 3.15                                  | 3.26 | 3.38 | 3.59 | 3.84 | 4.14 | 4.32 | 4.44 | 4.51 |
| BR1          | 4.80                                  | 4.95 | 5.10 | 5.40 | 6.17 | 7.06 | 7.69 | 7.98 | 8.19 |
| BR2          | 3.66                                  | 4.54 | 4.95 | 5.74 | 6.42 | 7.03 | 7.66 | 7.81 | 8.03 |
| BR3          | 2.69                                  | 2.82 | 2.86 | 3.00 | 3.39 | 4.12 | 4.52 | 4.76 | 5.07 |
| SCh1         | 3.57                                  | 3.68 | 3.75 | 3.87 | 3.95 | 4.05 | 4.12 | 4.17 | 4.25 |
| SCh2         | 4.12                                  | 4.19 | 4.25 | 4.43 | 4.56 | 4.69 | 4.79 | 4.83 | 4.91 |
| SR           | 4.90                                  | 4.95 | 5.18 | 5.52 | 5.83 | 6.16 | 6.34 | 6.41 | 6.48 |
| StbR         | 5.30                                  | 5.52 | 5.69 | 5.99 | 6.37 | 6.66 | 6.89 | 7.01 | 7.25 |

# Difference of D.O. %-tiles for zones of Savannah Estuary

Simulation Period: Year 1997 AUGUST 1 -AUGUST 31

Baseline nario: WASP1997Existing

Project ario: 6B2ft-withDOmitigation

| Zone Name | Project - Baseline Difference (mg/l) |       |       |       |       |      |      |       |       |  | Project - Baseline Relative Difference (%) |       |       |       |      |      |      |      |      |  |
|-----------|--------------------------------------|-------|-------|-------|-------|------|------|-------|-------|--|--------------------------------------------|-------|-------|-------|------|------|------|------|------|--|
|           | 1%                                   | 5%    | 10%   | 25%   | 50%   | 75%  | 90%  | 95%   | 99%   |  | 1%                                         | 5%    | 10%   | 25%   | 50%  | 75%  | 90%  | 95%  | 99%  |  |
| FR1       | 0.03                                 | 0.03  | 0.03  | 0.04  | 0.06  | 0.06 | 0.00 | -0.03 | -0.02 |  | 0.8                                        | 0.7   | 0.7   | 1.0   | 1.3  | 1.3  | 0.0  | -0.6 | -0.3 |  |
| FR2       | 0.14                                 | 0.12  | 0.12  | 0.17  | 0.23  | 0.26 | 0.33 | 0.40  | 0.50  |  | 3.6                                        | 3.0   | 2.9   | 3.9   | 5.3  | 5.6  | 7.1  | 8.6  | 10.5 |  |
| FR3       | 0.24                                 | 0.23  | 0.23  | 0.32  | 0.34  | 0.34 | 0.52 | 0.50  | 0.41  |  | 6.4                                        | 6.2   | 6.0   | 8.0   | 8.2  | 7.7  | 10.9 | 10.4 | 8.3  |  |
| FR4       | 0.25                                 | 0.24  | 0.25  | 0.32  | 0.36  | 0.34 | 0.46 | 0.38  | 0.36  |  | 6.9                                        | 6.5   | 6.7   | 8.1   | 8.7  | 7.7  | 9.3  | 7.1  | 6.5  |  |
| FR5       | 0.30                                 | 0.27  | 0.29  | 0.34  | 0.33  | 0.22 | 0.33 | 0.39  | 0.40  |  | 8.2                                        | 7.2   | 7.4   | 8.3   | 7.7  | 4.6  | 6.2  | 6.9  | 6.9  |  |
| FR6       | 0.23                                 | 0.23  | 0.22  | 0.29  | 0.27  | 0.15 | 0.34 | 0.42  | 0.42  |  | 5.9                                        | 5.7   | 5.3   | 6.8   | 6.0  | 2.8  | 5.9  | 7.1  | 7.0  |  |
| FR7       | 0.22                                 | 0.23  | 0.25  | 0.14  | 0.16  | 0.38 | 0.47 | 0.40  | 0.35  |  | 5.0                                        | 5.0   | 5.3   | 2.8   | 2.8  | 6.2  | 7.4  | 6.1  | 5.3  |  |
| FR8       | 0.23                                 | 0.19  | 0.13  | 0.16  | 0.47  | 0.74 | 0.79 | 0.83  | 0.84  |  | 4.8                                        | 3.7   | 2.4   | 2.8   | 7.7  | 11.5 | 11.8 | 12.2 | 12.1 |  |
| FR9       | 0.62                                 | 0.56  | 0.63  | 0.59  | 0.62  | 0.58 | 0.62 | 0.59  | 0.64  |  | 11.0                                       | 9.5   | 10.4  | 9.5   | 9.5  | 8.5  | 8.7  | 8.2  | 8.7  |  |
| FR10      | 0.23                                 | 0.34  | 0.33  | 0.31  | 0.33  | 0.46 | 0.42 | 0.53  | 0.63  |  | 4.0                                        | 5.8   | 5.5   | 4.9   | 5.0  | 6.8  | 5.9  | 7.4  | 11.4 |  |
| FR11      | 0.78                                 | 0.83  | 0.84  | 0.82  | 1.06  | 1.34 | 1.56 | 1.80  | 2.11  |  | 15.9                                       | 16.4  | 15.8  | 14.6  | 18.0 | 21.7 | 24.2 | 27.5 | 31.6 |  |
| MR1       | 0.23                                 | 0.29  | 0.31  | 0.33  | 0.28  | 0.26 | 0.35 | 0.39  | 0.41  |  | 5.2                                        | 6.4   | 6.5   | 6.7   | 5.4  | 4.6  | 6.0  | 6.5  | 6.7  |  |
| MR2       | 0.48                                 | 0.49  | 0.38  | 0.36  | 0.30  | 0.24 | 0.29 | 0.40  | 0.39  |  | 11.5                                       | 11.4  | 8.4   | 7.6   | 5.8  | 4.4  | 4.9  | 6.7  | 6.5  |  |
| MR3       | 0.76                                 | 0.67  | 0.73  | 0.63  | 0.55  | 0.31 | 0.12 | 0.06  | 0.11  |  | 19.7                                       | 16.5  | 17.8  | 14.5  | 11.7 | 6.0  | 2.1  | 1.0  | 1.9  |  |
| MR4       | 0.14                                 | 0.28  | 0.42  | 0.37  | 0.96  | 1.03 | 1.64 | 1.96  | 2.40  |  | 6.0                                        | 10.9  | 14.1  | 10.7  | 17.9 | 16.8 | 25.1 | 28.8 | 34.2 |  |
| MR5       | 3.52                                 | 3.35  | 2.94  | 2.62  | 0.73  | 0.29 | 0.02 | 0.03  | -0.20 |  | 163.9                                      | 132.2 | 96.2  | 73.0  | 12.8 | 4.6  | 0.4  | 0.4  | -2.8 |  |
| LBR1      | 0.54                                 | 0.59  | 0.59  | 0.59  | 0.58  | 0.59 | 0.73 | 0.69  | 0.65  |  | 12.6                                       | 13.1  | 12.9  | 12.3  | 11.7 | 11.4 | 13.8 | 12.7 | 11.7 |  |
| LBR2      | 0.70                                 | 0.69  | 0.68  | 0.66  | 0.67  | 0.67 | 0.68 | 0.75  | 0.75  |  | 19.0                                       | 18.2  | 17.1  | 15.9  | 15.5 | 14.7 | 14.4 | 15.7 | 15.4 |  |
| LBR3      | -0.39                                | -0.32 | -0.28 | -0.19 | -0.11 | 0.04 | 0.08 | 0.09  | 0.05  |  | -10.9                                      | -8.9  | -7.5  | -5.0  | -2.8 | 0.9  | 1.8  | 2.1  | 1.2  |  |
| BR1       | 1.27                                 | 1.37  | 1.46  | 1.50  | 2.13  | 2.85 | 3.26 | 3.48  | 3.59  |  | 36.0                                       | 38.2  | 40.0  | 38.6  | 52.8 | 67.5 | 73.5 | 77.2 | 77.9 |  |
| BR2       | 0.37                                 | 1.16  | 1.49  | 2.12  | 2.61  | 3.04 | 3.52 | 3.51  | 3.64  |  | 11.1                                       | 34.3  | 43.1  | 58.7  | 68.4 | 76.2 | 85.0 | 81.7 | 83.0 |  |
| BR3       | -0.76                                | -0.69 | -0.69 | -0.62 | -0.35 | 0.27 | 0.55 | 0.76  | 1.06  |  | -22.1                                      | -19.7 | -19.5 | -17.2 | -9.4 | 7.0  | 14.0 | 19.1 | 26.3 |  |
| SCh1      | 0.06                                 | 0.12  | 0.12  | 0.15  | 0.13  | 0.10 | 0.08 | 0.08  | 0.09  |  | 1.8                                        | 3.3   | 3.3   | 4.1   | 3.3  | 2.4  | 2.0  | 1.9  | 2.1  |  |
| SCh2      | 0.18                                 | 0.15  | 0.16  | 0.18  | 0.19  | 0.20 | 0.18 | 0.18  | 0.18  |  | 4.4                                        | 3.6   | 3.9   | 4.2   | 4.3  | 4.4  | 4.0  | 3.9  | 3.8  |  |
| SR        | 0.00                                 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  |  | 0.0                                        | 0.0   | 0.0   | 0.0   | -0.1 | 0.0  | -0.1 | 0.0  | 0.0  |  |
| StbR      | 0.56                                 | 0.59  | 0.60  | 0.56  | 0.58  | 0.57 | 0.59 | 0.58  | 0.70  |  | 11.7                                       | 12.0  | 11.8  | 10.2  | 10.0 | 9.4  | 9.4  | 9.1  | 10.6 |  |





**FOR CONTINUATION OF HOUSE DOCUMENT 112-153**

**SAVANNAH HARBOR EXPANSION PROJECT  
CHATMAN CO., GEORGIA & JASPER CO., S. CAROLINA:  
FINAL GENERAL RE-EVALUATION REPORT AND  
ENVIRONMENTAL IMPACT STATEMENT**

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